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Ecological Concerns in Transition

A Comparative Study on Responses to Waste and Environmental Destruction in the Region

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A Comparative Study on Responses to Waste and Environmental Destruction in the Region

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Editor Ninna Mörner
Editorial Board Florence Fröhlig, Tora Lane and Eglė Rindzevičiūtė
Layout Sara Bergfors and Lena Fredriksson/Serpentin Media
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Preface

The Persistent Challenge of Environmental Issues

The Centre for Baltic and East European Studies (CBEES) was founded in 2005 at Södertörn University, Stockholm. The Centre promotes and develops research and doctoral studies on the Baltic Sea region and Central and Eastern Europe. CBEES organizes conferences, workshops, webinars, public lectures and a series of Advanced seminars. Its academic staff consists of professors, research coordinators, postdocs, guest researchers and PhD students connected to the graduate school BEEGS. CBEES also publishes *Baltic Worlds*, a quarterly scholarly journal which, like this Report and CBEES itself, is funded by the Swedish Foundation for Baltic and East European Studies (*Östersjöstiftelsen*).

The CBEES State of the Region Report is an annual publication, reporting and reflecting on social and political developments in the Baltic Sea Region and Eastern Europe, each year taking a new topical perspective. The first report, covering events in 2020, focused mainly on constructions and reconstructions of national historical memory in the region and the various forms of instrumentalizing the past. The 2021 report made a wide comparative study of Far-Right movements in the region, and their connection to populist politics and tendencies towards authoritarianism. The present report instead focuses on the challenges posed by environmental issues: how the different states in the region handles matters connected to pollution, mismanagement of natural resources, the effects of climate change and the problems connected to garbage deposits and nuclear waste.

Several of the contributions apply a longer time perspective on the environmental issues in the region. The Soviet period mismanagement of natural resources and general indifference to industrial waste and pollution is naturally an important factor, but in some cases this indifference was also the hallmark of previous regimes. And it is also abundantly clear that these problems continued to haunt the region also after 1990, when the Soviet legacy gave way to forces connected to market economy.

What causes especially deep concern at the moment is Russia's war against Ukraine, and the complete destruction of Ukrainian towns and cities, the enormous loss of human lives, and environmental hazards this war is causing. But also alarming, in a longer time perspective, is the present Russian regime's dependence on oil and gas, its disregard for the detrimental effects of global warning, and its blatant mismanagement of nuclear waste in the Arctic region.

Ninna Mörner has edited the report, in cooperation with Florence Fröhlig, Tora Lane and Eglė Rindzevičiūtė. We hope that the report will stimulate debate within the academic community as well as public discussion on these very crucial matters. ●

Anna Maria Jönsson
Deputy Vice-Chancellor for Research,
Södertörn University

Per Bolin
Director of CBEES, Södertörn University

“What causes especially deep concern at the moment is Russia's war against Ukraine.

Transitions for and against the Environment: Waste, Destruction and Prospects of Change

by **Florence Fröhlig** and **Tora Lane**

A few weeks into the Russian invasion of Ukraine, the world, and in particular Europe, was facing the threat of a possible nuclear catastrophe, first in Chornobyl,[1] and then in Zaporizhzhya, where intense fighting has been raging continuously and up to this day. These threats of a nuclear catastrophe not only added a new dimension to the horrors of war and its forces of devastation and destruction; they also opened a new perspective on the frailty of human dependence on energy infrastructure. In that the war threatens not only with a human but also with a natural disaster, it has shown that today's technological modernity places us in an unprecedented precarity vis-à-vis nature. War threatens massive, not to say complete, annihilation. But the immense nuclear threat is not the only hazardous way in which politics, economy and the environment are entangled in the war. Energy, resources, and infrastructure have become key weapons in warfare used against the population, to the extent, as one of the editors of this volume, Eglė Rindzevičiūtė, writes in her contribution, that Ukraine has become hostage to the infrastructure as "points of vulnerability". And of course, beyond the scene of war people have been affected in different ways by the effect of war on the energy and food supply chains. Aspects of everyday life are entangled in complex global economic and ecological infrastructures that have also been targeted during this war.

Although this infrastructure is global, it is also framed out of the historical, natural, and cultural conditions of the region. In her article, Rindzevičiūtė traces the current situation back to the way that the infrastructure in Ukraine was shaped through the legacy of Soviet industrialization and the process of transition after the fall of the Soviet Union. Irina Sandomirskaja delves in her essay into the history of the post-war destruction of cities, or urbicide, as means of modernization, but also as a form of warfare that we are witnessing again today. These are only instances of the complex relation between the historical legacy of the region and

current developments in the sphere of ecological concerns to which we have devoted this year's CBEES State of the Region Report. In order to shed light on the many ways of dealing with ecological concerns inherent from or relating to the legacy of communist modernity and the transition, we gathered contributions from scholars from different countries in the region who work predominantly within environmental sciences but also in cultural history. We combine essays dealing with overall themes and additional perspectives with a number of country reports in the Baltic Sea Region, Eastern and Central Europe and the countries of the post-Soviet space and former Yugoslavia. The responses vary in terms of theme and scope, but together they constitute a map of diverse environmental concerns in the region and in the relation to the historical legacy as well as contemporary awareness and responses, forms of resistance and engagement with environmental issues through politics, activism, and art.

> A particular case in point is the effect of Soviet modernization on the nature and people of the Arctic.

Although many years have passed since the fall of the Soviet Union, in many post-communist countries in the region of the Baltic Sea and Eastern Europe the relation to the environment in politics and beyond can be understood with regard to these two developments: Soviet modernization and the subsequent transition period after the fall of the Berlin wall. With its utopia of a different historical process of industrialization, communism had offered an alternative road to modernization that was decisive for the way that it would come to treat nature and its resources. Although the Soviet Union was founded in 1922, the real starting point for the Soviet communist project of state-governed industrialization, extensive extraction of natural resources, collectivization and militarization came shortly after the launch of the Five-Year Plans in the late 1920s, with the so-called *Plan for the Transformation of Nature* in 1930, that can be qualified as "the most harmful and large-scale anti-environmental program", as Paul Josephson writes.[2]

The Plan displays an openness to a cynical instrumentalization of all living things and resulted in extensive exploitation of non-humans and human beings, with considerable consequences for Indigenous people who were subjected to eviction and forced relocation. This feature of Soviet communism came to have long-lasting consequences for the region, as thematized by several contributions in this volume. A particular case in point is the effect of Soviet modernization on the nature and people of the Arctic, as discussed in two essays by Tatiana Kasperski and Paul Josephson, and Vladislava Vladimirova.

As Eastern Europe came under the Soviet Union's sphere of influence after the Second World War, the communist model of industrialization and modernization spread and intensified throughout the region. As the starting point for the above-mentioned essay about post-war *urbicide*, Sandomirskaja takes the case of the Soviet systematization of Romanian villages. Yet if the Warsaw Pact signatory states all went through a post-war process of rapid modernization with massive industrialization, increased fossil fuel extraction, extreme urbanization, agriculture intensification and the implementation of nuclear industries, each country was different. And although the communist system was based on central planning, not even in one single country, as Justyna Chodkowska-Miszczuk here shows in the case of Poland, could the intensification of the agricultural industry be homogenous due to the country's pre-WWII tradition. In many respects, post-war communist modernization ran parallel with the West, especially since the communist party secretary Nikita Khrushchev had parted with Stalinist Bolshevism towards the end of the 1950s and launched the paradigm of socialist competition with capitalism both on earth and in space. Yet, needless to stay, communist countries' centralized systems with their state planned industry and economy continued to frame their specific relation to its people, the environment, and its resources up until the fall of the Berlin wall.

Nature knows no borders, and the effect of Soviet industry on the environment also came to be felt more on the other side of the Iron Curtain. The production of hazardous effluents and transboundary pollution affected both the former Soviet Union, Soviet bloc countries and neighboring countries. The Chornobyl incident not only entailed immense suffering but also took the question of the ability of the system to cope with a catastrophe and the state of its technical development beyond its own borders and may have played a certain role in bringing about the collapse of the Soviet era, as discussed by Andrei Stsiapanau in his contribution. Yet,

as emblematic as Chornobyl has become, we should not forget other nuclear accidents in the region, such as the Chelyabinsk nuclear accident, also called the Kyshtym or Mayak disaster, which has polluted vast areas of the environment and human settlements. The Mayak disaster is presented here in a documentary project by the artist Pavel Otdelnov.

The ecological concerns faced by countries in the post-communist space cannot solely be understood with regard to the legacy of communist modernity. As Pavlinek and Pickles argued in *Environmental Pasts/Environmental Futures in Post-Socialist Europe*, there is no reason to sustain the myth of an "East-European Ecocide".[3] The impact on the environment was uneven, with certain black spots such as the black triangle in Poland-Germany-Czechia. The exploitative approach to nature is not exclusively communist, as Josephson has pointed out, and has been similar to that of capitalist countries. The differences lie in the political, economic, and technical conditions for coping with environmental problems.[4]

Further, current ecological concerns are also connected to the breakdown of state structures and developments in the region during the transition period, as for instance the unprecedented race for resources in the global economy today. When the Eastern Bloc set out on a transition path from a state-owned planned economy to privatization and a market economy, the spheres of industry and natural resources naturally became highly attractive for private foreign and national interests, and the transition from state initiatives to private (and in some case also back to state-owned through nationalization) have also proven hazardous for the environment. Instead of making responsibility more attractive and transparent, pollution and its effects have by no means always been well handled in the countries with increasing authoritarianism. In the post-Soviet space, we see abandoned heavy industries, mines and nuclear plants which no one seems to take responsibility for and that to this day continue to contaminate ground, water, forest and air. Particularly worrying are the abandoned nuclear sites in the Soviet Union, for instance in Tajikistan, where it has left highly polluted territories with background radioactive levels well above the acceptable level nationwide. The pollution not only threatens the environment of the entire Ferghana Valley; residents who are poorly informed about radioactive health risks let their children play on a radioactive spoil tip situated in the center of the town of Taboshar, for instance, and unemployed people dig out radioactive metal from the deposits, which they resell.

> Nuclear waste risks creating a world that can no longer sustain life.

And if much has been written in the media about the activation of radioactive dust in the Chornobyl area following the Russian invasion, much less can be found about e.g. decommissioned mines that cannot be maintained and hazardous materials released into ground water. Moreover, the threat of targeting nuclear facilities during warfare, whether deliberately or not, has become a global security and environmental concern, as Nickolai Denisov and Alla Yushchuk demonstrate in their report. Nuclear catastrophe has become an impending threat. Nuclear waste risks creating a world that can no longer sustain life. Beyond the loss of human life and the shattering of cities and livelihoods, war means long-lasting destruction of the environment: removing dangerous military waste, clearing land, water, air, and natural habitats from the remnants of war, and stabilizing ecosystems, will be a heavy burden on generations to come. A region where the impact from the exploitation of resources is perhaps most apparent is the Arctic, the topic of several essays in this volume. As a gold mine for various vast resources, its strategic position and its scarcely populated areas, the Arctic has become a showcase of cynical exploitation for the sake of both state and private wealth, testifying to an utter neglect of the consequences for the environment and the habitat. Three contributions in this volume examine the consequences of state policies and private investments for waste production and pollution (Kasperski and Josephson), the habitat of Indigenous people (Vladimirovna) and local activism (Elena Gorbacheva).

With the transition to a market economy after the fall of the Soviet Union, environmental engagement came to be seen as an ideological threat to liberal economic development, an attitude that today has given way to a questioning of facts concerning the environment in political economic terms, tending to deny the science. In an essay on the relation to ecological concerns in Russia today, Alexander Etkind sees a tendency towards denial of modernity and modernization itself, a means of isolating from time in order to preserve cynical exploitation.

And Marc Elie shows how Kazakhstan, which shares with Russia a past that caused great damage to nature due to Soviet oil extraction and nuclear experiments, has now, also like Russia, become a resource state with an ambivalent attitude towards a green transition, while it bases the economy on extraction of oil, fossil fuels, and minerals. Other countries face problems due to foreign private investors who are not concerned with the effects on a local level. As shown in the contribution on Georgia by Beril Ocakli and Benedikt Ibele, this is the case with the reconstruction of the Rikoti Highway, "the modern Silk Road", intended to be an alternative transit route between Europe and China, with deep consequences for the regional environment. This does not only concern the post-Soviet sphere. In the case of the transition to private ownership in Albania, and in particular, the Patos-Marinza oilfield, Sara Persson shows how the narrative of renewed high-tech effective modernization in the post-communist era has brought about not an increase in welfare but instead widespread poverty and excessive gas (CO_2) emissions. Damir Arsenijević, in the case of Bosnia-Herzegovina, proposes "wasting" as a form of social wealth that confronts and paralyses living labor.

> There is an urge to go beyond the dichotomy of human and non-human beings.

There is of course a dividing line in the countries of Central and Eastern Europe between EU and non-EU members, yet as shown in the cases of both the Czech Republic and Hungary, an attitude of skepticism towards environmental engagement can be found also in the former. With time, countries that have been integrated into the European Union have set on a different path with regard to the environment, facing an EU market that meant either new regulations with impact on a local level, or de-regulation that could also lead to an increase in waste, as Gilles Zsuzsa has demonstrated.[5] And besides the fact that one may consider EU policy insufficient vis-à-vis the ecological threats today, the transition period in the Eastern and Central European part of the EU also displays a variety of different problems and challenges in relation to these regulations and restrictions. Andrea Cosmina-Albulescu, Michael Manton, Daniela Laron and Per Angelstam shows in the case of Romanian forest management how difficult the implementation of EU policies for greater biodiversity has been in actual reality. And in the case of Finland, Markku Lehtonen and Matti Kojo show that trust in science, even in democratic countries, can lead to an over-trust as science can be used as a political tool of justification.

Surprisingly, as we can see in a couple of country reports, citizens in authoritarian states tend to mobilize more actively. The anti-Shies protests in Northern Russia demonstrate public resistance against the imposition of new waste repositories in post-Soviet Russia before the introduction of the "Foreign Agent" law in 2012 (Kasperski & Josephson, and Gorbacheva reports). Because of the very palpable threat to people on a local level, it appears that environmental issues can unite people at grassroots level, despite strong political repression and human rights violations. Several reports also invite us to think of the importance of local activism, but also of different forms of local engagement or corporate responses to the imposition of supra-national systems. In the case of sustainable food production in Latvia, agriculture in Poland, co-existence with wildlife in Bulgaria, or forest management in Romania, local bottom-up expertise seems crucial for a sustainable future.

The ongoing war marks a new historical turn, as several contributions emphasize in this volume. The war in the Balkans, as Irina Sandormirskaja wrote, led to the recognition of the consequences of war on the civilian population, and with time, on the environment. The landscape scars[6] testify to the human-caused harm to nature, to the ongoing ecocide. And if war usually emerges from disputes over political borders, pollution and hazardous emissions have no borders. And as Denisov and Yushchuk argue in their contribution, the consequences of war reach far beyond human casualties. Animals and non-human beings, such as forests and trees, meadows and ravines, lakes and rivers, soils and especially weather are impacted as well. These non-human actors prompt us to challenge our anthropocentric understanding of warfare and to reflect on the "age-old humanist distinction between natural history and human history".[7] There is an urge to go beyond the dichotomy of human and non-human beings in order to be able to prepare for the coming environmental changes.

Several reports show that although the legacy of the past is looming over the environment in the region, there is also a need to find specific regional and local means of coping with ecological problems and transforming indus-

tries and supply chains. This may not always be in accord with how transition was conceived in the 1990s, but may also pose new-old challenges, or rather the challenge of finding new ways of relating to the past. As the Bulgarian case in this volume shows, successful human-wildlife coexistence has been possible thanks to the low state intervention and limited investments during the post-socialist period. The sustainable habits that emerged from the communist period might be reactualized. During Soviet times, recycling was organized in the form of landfills, which created ecological problems. However, these problems became much worse as the system collapsed and the level of consumption increased considerably. The traditional food supply practices inherited from the communist period are another example of a system that was sustainable. The untrustworthiness of the supply chains in a planned economy led citizens to consume locally and develop alternative supply channels. The current need to engage in more sustainable and regenerative food systems would gain by learning from these traditional practices already in place.

If the contributions remind us of the need to capitalize on local people's knowledge and social practices to face current ecological challenges, they also urge us to engage with the decolonization of knowledge. This report begins such a conversation by engaging scholars from the region to reflect on the current environmental challenges they are facing. And it shows, not surprisingly, that the kind of knowledge that has been produced hitherto reflects "mainstream environmentalism" and epistemic inequality. The ongoing war in Ukraine questions even more accurately how the world is being informed about environmental consequences and by whom. Since the ecological problems at stake have no borders, we should critically consider the political implications of the epistemic hierarchies embedded in previous and current knowledge production, but also our territorializing and anthropocentric practices.

References

1 Chornobyl is the Ukrainian spelling that is now adopted by the IAEA. Chernobyl is however the spelling used when the catastrophe took place in 1986, under Soviet regime. In this report, therefore, both spellings occur.

2 Paul Josephson, "Introduction. The Stalin Plan for the Transformation of Nature, and the East European Experience", in ed. Doubravka Olšáková, *The Name of Great Work. Stalin's Plan for the Transformation of Nature and its Impact in Eastern Europe*, (New York: Berghahn Books, 2016), 1–36.

3 Peter Pavlinek and John Pickles, "Environmental Pasts/ Environmental Futures in Post-Socialist Europe" in eds., JoAnn Carmin and Stacy D. VanDeveer *EU Enlargement and the Environment. Institutional Change and Environmental Policy in Central and Eastern Europe* (2004): 241.

4 Ibid.

5 Gilles Zsuzsa, *Paprika, Foie Gras, and Red Mud: The Politics of Materiality in the European Union* (2016 Indiana University Press)

6 Anna Storm, *Post-Industrial Landscape Scars*, (2014 New York, NY: Palgrave Macmillan).

7 Dipesh Chakrabarty, "The Climate of History: Four Theses", *Critical Inquiry* no. 35 (2008): 197–222 (201).

Hosts and Hostages of Modern Infrastructure:

The Halos of Destruction in Ukraine

by **Eglė Rindzevičiūtė**

This essay explores the legacy of the Soviet technoscientific industrialization in Ukraine as a case of infrastructural modernization which caused environmental harms and, in turn, has become a target of destruction during the ongoing war with Russia. As noted by Paul Edwards, it is when infrastructures fail, are disrupted or destroyed that their constitutive social and political function becomes visible.[1] However, the societal significance of infrastructure also manifests at the point of design. The politics of infrastructure can be expressed in the long-term future planning, where vulnerabilities and strategic opportunities are anticipated: infrastructures get securitized.[2] In what follows, I discuss the ambivalent roles of the nuclear power and coal and steel industry infrastructures in Ukraine as they shifted from vehicles of progress to sources of vulnerability and harm. Due to the limited space, this essay cannot do justice to the complexity of Ukraine's industrial and environmental history. The main goal is to contribute an argument that societies are both hosts and hostages of industrial infrastructure, resulting in interdependencies that can lead to vulnerabilities.[3] This is particularly significant in the countries such as Ukraine which are undergoing a violent process of de-colonization.

As noted by Olesya Khromeychuk, there is a lack of social research on Ukraine despite it being the largest country in Europe.[4] In the context of East European area studies, Ukraine was mainly studied in relation to ethnic relations, genocide, cultural history and politics of post-Soviet transformation, whereas existing knowledge about the Ukrainian environment, science and technology is largely focused on the impacts of the Chornobyl catastrophe. Although the work on Ukrainian science, technology, and the environment during the 20th century is emerging, much more should be done.

There is urgency for this too: since 2014, Russia's war action has been physically destroying the material remnants of Soviet modernization and development and in so doing, erasing the evidence of just how much the development of Soviet civilization depended on the subjugated republics. After the Second World War, much of the Soviet economy depended on the technoscientific development streaming from Ukrainian institutions. For instance, the first Soviet mainframe computers MESM and then BESM were designed by Sergei Lebedev in Kyiv in 1951. The plan to establish an all-union computer network, OGAS, was created and driven by another

PHOTO: WIKIMEDIA COMMONS

Azovstal iron and steel factory, Mariupol, Ukraine, 2014.

Kyiv scientist, the cybernetician Viktor Glushkov in 1964–1970.[5] The entire field of technology assessment and organization of scientific information was shaped by Genadii Dobrov in the 1950s–1960s.[6] Sophisticated methods of planning and computerization enabled the construction of the gas pipes through Ukraine in the 1970s, which secured the flow of revenue that kept the faltering Soviet economy alive for a decade and, in the longer term, contributed to the rise of Russia's oil and gas fueled power.[7]

Therefore, by targeting industrial infrastructure Russia is arguably destroying not only utilities, but also the very Ukrainian past, the material memory milieus, and undermining the source basis for hitherto unwritten histories. Moreover, I argue that Russia's destructive action is particularly damaging because it *erases the evidence of the earlier damage* inflicted by the ruthless Soviet industrialization in Ukraine. The cases discussed pertain to the most prominent examples where coal, steel and nuclear infrastructures became objects of military destruction, focusing on the Azovstal steelworks in Donbas, the nuclear site of Chornobyl and the neutron research facility in Kharkiv.

Coal and Steel Host(age)s

The Donbas region, situated in Eastern Ukraine, was a center of the heady Soviet industrialization program since the 1930s. A century of emissions of heavy metals and other chemical particles made this region one of the most polluted areas in the world.[8] It is profoundly shaped by what Anna Storm described as the industrial scars of its landscape.[9] The very name Donbas is a contraction of Donetsk Coal Basin, which is indicative, as Victoria Donovan and Iryna Sklokina noted, of the extractivist and colonial framing of the region, a reading which is increasingly often articulated in Ukrainian cultural discourses, where some suggest dropping the use of the name.[10] The mining industry in Donbas began in the 1870s, when iron ore, anthracite, and coke deposits were discovered. The mega scale constructions, resulting in the metallurgic factories such as Azovstal, Krivorozhstal, and Zaporizhstal, were initiated by Stalin during the first five-year plan. Azovstal was expected to match the grand scale of Magnitogorsk, the flagship Soviet industrial city which was built at breakneck speed as Stalin desired to catch up with US levels of steel production.[11] The construction of Azovstal in the harbor town Mariupol was approved in 1930 and completed in 1933. Azovstal, alongside with the older Il'ich steelworks created by merging two nineteenth-century factories, became the most powerful organizational actor in Mariupol, shaping the city's life for the next century.[12] Like Magnitogorsk's, Mariupol's population grew to about 400,000, but unlike Magnitogorsk's,

Mariupol's roots went back to the eighteenth century and it had a strong local identity, where Ukrainian and Soviet industrial working class cultures intertwined.[13]

During the Second World War, Azovstal's production lines were evacuated to the Urals before the city was captured by the Nazis. During the occupation, the factory was managed by the Krupp concern. The Germans partially rebuilt the mines that were destroyed by the retreating Red Army and deployed forced labor until their own retreat, when they blasted Azovstal so that it was no longer usable. Those survivors who had worked under the Germans were stigmatized as traitors.[14] These waves of ruthless industrialization, occupations and purges devastated not only the Ukrainian population but also its environment.[15] Azovstal was rebuilt in 1945, when bomb shelters and tunnels for high grade electricity cables were installed.[16] It is in these underground spaces that city residents and Ukrainian fighters from the Azov regiment took shelter during the Russian invasion in 2022.

> The fights over Mariupol started in 2014, but the steel city remained in Ukraine.

The Soviet Ukrainian coal and steel industry grew in the 1950s and 1960s, but began to decline in the 1970s. In the 1990s, about 100 of 246 mines were closed and those remaining open were in urgent need of modernization.[17] The steel industry also faced challenges: Although Azovstal, once the largest steel producer in the country, invested in the modernization of the plant and continued exporting its production to Russia and internationally, the region suffered high unemployment and pollution.[18] Researchers referred to the stretch between Donbas and Kharkiv as a post-Soviet "rust belt".[19] It was also a toxic belt: the Soviet coal mining and metallurgic industries produced emissions and left behind mountains of toxic waste, both underground and overground, contaminating ground water and the atmosphere.[20] While the development of the Soviet modernity in Donbas was entrenched in what Oleksiy Radynski described as "endless, voluntary, sacrificial self-exploitation" epitomised by the industrial shock-workers in the 1930s who over-fulfilled their quotas at the expense of their own health, the crumbling and corrupt post-Soviet economy continued exhausting both landscapes and bodies in the region.[21] In the past three decades, environmentalists called for significant investment to clean up the legacies of Soviet industrial development and to modernize coal and steel production.

However, the opposite happened: the 2014–2022 Russian invasion added another layer of destruction to Donbas. The military escalation followed Maidan protests (2013–2014), when President Yanukovych refused to sign a trade agreement with the European Union, with the Russian occupation of Crimea and the declaration of Donetsk and Luhansk self-proclaimed republics in 2014. The fights over Mariupol started in 2014, but the steel city remained in Ukraine. Between 2014 and February 2022, wars in Donbas resulted in the displacement of 1.8 million and thousands of casualties. The region's key public health infrastructure suffered vast damage: in addition to the shelling of hospitals, the population suffered from a deteriorating environment following the destruction of water filtration plants, release of hazardous chemicals and escape of hazardous materials from mines into the ground water.[22] There were many unexploded mines in the countryside. According to a study done under the auspices of the United Nations Environment Programme, in 2014–2018, the war severely impacted ecosystems within an area of at least 0.5 million hectares.[23] Only about 15% of Ukrainian land is covered with forest and hardly any spaces of natural environment exist that are not transformed by human economic activities. The ongoing war is expanding the belligerative landscapes (the landscapes of destruction), which are estimated to occupy about 20% of the territory.[24]

The ongoing industrial scarring was caused not only by mining activities, which were developed in Donbas for several centuries, but also nuclear technology: in 1979, a nuclear device was detonated underground in YunKom mine to test its impact on the accumulated gases. The residual radioactivity is contained underground but there is a significant risk of radionuclides escaping into the surrounding soil and water.[25] Further risks of radioactive contamination arise from a number of radioactive waste storage facilities, such as Donetsk State Factory of Chemical Products, where waste has been dumped since the 1960s.[26]

The military destruction and suffering add further to what researchers refer to as "superposition of halos of pollution" in Donbas.[27] These halos of pollution have gained high visibility in conjunction with social problems such as deprivation and wartime destruction. Indeed, the cultural imaginaries of Donbas region, as noted by

Victoria Donovan and Darya Tsymbalyuk, are cemented as a site of "extreme violence and despair," where visual artists and film makers, such as Sergei Loznitsa in his *Donbas* (2018), deploy "the aesthetics of dereliction and apocalyptic ruination".[28] In contrast, the Lithuanian anthropologist and film maker Mantas Kvėdaravičius documented the region's residents and their mundane, everyday forms of coping with the hardships and the war in his *Mariupolis* (2016) and *Mariupolis 2* (2022). The last film was released post mortem, as Kvėdaravičius was tragically executed by the Russian army during the siege of Mariupol, from where he was reporting in the spring of 2022.

With the Russian siege of Azovstal in the spring of 2022, the aesthetics of despair and extreme ruination was disseminated worldwide. Mariupol, a city hosting the key Ukrainian steel industry, became a hostage of the Russian army. City residents and the Azov regiment of the Ukrainian army took shelter in the Azovstal factory, hiding in the maze of underground tunnels when the Russian army were shelling the structure. The battles, known as the siege of Mariupol, lasted until May 20, 2022. The imaginaries of destruction and horror have firmly replaced not only the avant-garde and socialist realist images, such as Dziga Vertov's film *Enthusiasm: The Symphony of Donbas* (1931), but also the more gentle images of decay of the 1990s that attracted alternative tourists, fascinated with the industrial ruins.

Nuclear Host(age)s

The world media appeared to pause in shock when the news that the Russian army had entered the Chornobyl zone hit the front pages. When on February 24, 2022, Russia began a full-scale invasion of Ukraine, one of the lines of approach went through Chornobyl – the area of the worst man-made disaster, caused by the explosion of the RBKM reactor in 1986. On February 25, 2022, soldiers captured the Chornobyl nuclear power plant, including the exploded reactor Unit 4, covered by a shield (the other three reactors were inactive, shut down in 2000). The environment around the exploded reactor itself was an enormous hazard: For instance, a study revealed that workers involved in building the new shelter present cognitive deterioration, which is attributed to the exposure to radiation.[29] Moreover, the 30 km exclusion zone contains not only hotspots of radiation, but also about 800 radioactive waste storage facilities, a source of tremendous risk.

Ignoring, or perhaps not aware of, the radiological risk, the Russian soldiers dug trenches into the radioactive soil in the so-called Red Forest, activating the dust that sent the readings of the radioactivity meters up. The Chornobyl staff were taken hostage and ordered to continue their work at the reactor. The Central Analytical Laboratory that contained valuable radiological samples was looted and destroyed.[30] For the next few days Europe waited in trepidation as the radioactivity sensors were disrupted and no information was emerging from the captured Chornobyl. The International Atomic Energy Agency (IAEA) protested but to no avail. The world was facing an unprecedented nuclear threat: military action targeting civil nuclear power facilities, contravening the Geneva Convention (1979).

> Chornobyl was the first but not the last site of civil nuclear power to be entangled in the war action.

Chornobyl was the first but not the last site of civil nuclear power to be entangled in the war action: the following months saw the shelling of the Zaporizhzhia Nuclear Power Plant, damage to which was deemed to be much riskier than Chornobyl not only because Zaporizhzhia had large reactors running, but also because it kept a large amount of highly irradiated spent nuclear fuel on the site.[31] Scientific research reactors were also under attack: a new research reactor at the Neutron Source Facility, part of the Kharkiv Institute of Physics and Technology, the crucible of Soviet atomic power, was destroyed by Russian shelling.[32]

Threatening and destroying the material infrastructures that are symbols of Ukraine's westward orientation and development adds to the overlapping halos of destruction. The social and political significance of nuclear reactors cannot be underestimated. Their origins are rooted in the dreams and utopias of the 20th century's atomic age: To secure the political status of a nuclear power in the arms race, to design a source of reliable energy to fuel economic growth and social development, to serve as a symbol of technoscientific prowess and to bolster the status and power of the state socialist regime in the Cold War competition.[33] The political effects of the Chornobyl disaster spilled over in the socialist bloc countries, fueling anti-nuclear and pro-democracy movements.[34] It also influenced the nuclear sector globally by prompting the increase of safety regulations and stress

PHOTO: IAEA

IAEA Director General Rafael Grossi and mission team members inspecting Zaporizhzhya nuclear power plant in Ukraine, September 1, 2022.

PHOTO: IAEA

Reactor 2 during the September IAEA inspection of Zaporizhzhya nuclear power plant.

testing of nuclear facilities.[35] Following the collapse of the Soviet Union in 1991, the Ukrainian nuclear sector was anchored in the dedication to peace building by returning nuclear weapons to Russia and securing the energy and environmental futures by modernizing, or shutting down, the country's fifteen nuclear reactors. Indeed, the modernization of the Ukrainian nuclear sector became a symbol of post-Soviet reconstruction and integration in the European Union as well as globalization.[36]

Nowhere was this so evident as in the case of the Chornobyl Shelter project, managed and funded by the European Bank of Reconstruction and Development, which entailed an extensive international cooperation in constructing what would become "the largest moveable, land-based structure ever built".[37] The first shelter, a concrete shell surrounding the exploded reactor, was built in 1986–1987. However, this hastily constructed structure did not meet nuclear safety standards; it was not water- or airtight and was not intended to last longer than 30 years. The radiological situation deteriorated, particularly because of the ingress of rainwater and accumulation of dust inside the shelter.[38] To address this situation, in 1995, the EU TACIS program commissioned a feasibility study, which engaged experts from the EU, USA, Japan, Ukraine and Russia. It was decided to adopt an incremental approach to this extremely complex site by solving separate issues progressively, as the high radioactivity levels and the degree of internal destruction of the reactor prevented physical access and knowledge of what was actually on the site.[39] The task was to first repair the original shelter and to develop a solution for the new containment.

International collaboration was fundamental for securing Chornobyl. The Ukrainian Energoatom worked with a range of international organizations, national bodies, and companies, such as the British Nuclear Fuels, Électricité de France, and Bechtel Inc. The projected cost of the project was immense. The Chornobyl Shelter Fund was established by the agreement between the government of Ukraine, the G7, and the EU in 1997. The European Bank of Reconstruction and Development was appointed to manage the scheme.[40] In 2007, the New Safe Confinement project was launched. Construction started in 2010, finished in 2016 and the shield became operational in 2019. In all, 45 countries (including Russia) were involved by supplying funds and contractors to the project, which cost over 2.5 billion euros.[41]

Furthermore, in the last two decades Chornobyl became a site of cultural tourism generating a substantive cultural economy in the region. The interest in dark and disaster tourism was fueled by both the media and scholarship, as people watched the HBO series *Chernobyl* (2019), read *Chernobyl Prayer* (2013) by the Nobel Prize winner Svetlana Alexievich, or plunged into the many works of historians, such as Kate Brown and Serhii Plokhy.[42] In 2021, the Ukrainian heritage institutions began the work on the case to list Chornobyl as a Unesco World Heritage Site, a designation that is expected to bring substantive investments in the region, enhance its

global brand and promote it as a cultural tourism destination.[43] The Russian army invasion, in this way, constituted a crushing blow to the Ukrainian efforts to reflect upon the past and manage the industrial scars it has left through cultural heritage.

In this context, by capturing Chornobyl, Russia made a clear statement that it is prepared to endanger and destroy the central symbolic places of Western- and globally oriented development of Ukraine. For instance, the Russian army looted and destroyed the Central Analytical Laboratory, established to support Chornobyl's radioactive waste management program. The laboratory became operational in 2015 and the damage is valued at 6 million euros.[44] Another key part of the Chornobyl site is the ISF-2 facility for the dry storage of the highly radioactive spent nuclear fuel, which was built at the cost of 400 million euro and opened in 2020.[45] The Russian invasion placed this storage at risk as power lines servicing the reactors site and the ISF-2 were repeatedly cut.

Finally, another example of Russia threatening the modernization of the Ukrainian nuclear program is the fate of the newly built research reactor at the Kharkiv institute, a symbol of the new, internationally networked Ukrainian physics community. The Neutron Source Facility (NSF) enabled a study of the processes in reactors, material science and medical research. It was constructed in cooperation with US Argonne National Laboratory, following a cooperation agreement signed in 2010.[46] Funded by the US with over $70 million, the facility became operational in 2015 and the reactor was completed in 2021.[47] On March 6, 2022, parts of the building hosting the NSF, as well as its substation, were destroyed by Russian missiles. Although the reactor itself was not damaged and no radioactivity was released thanks to the pre-emptive stopping of the reactor and removal of the fuel, the Institute stocked a significant amount of radioactive materials for research purposes, damaging which could have led to an ecological disaster.[48]

The significance of this attack is deeply symbolic: the Institute, then called the Ukrainian Physics-Technical Institute (UFTI), was founded in 1928 as the first atomic research institution in the Soviet Union. The work done at UFTI led directly to the creation of the first Soviet pile reactor F-1, laying the foundations for the atomic bomb.[49] During the three decades of independence, UFTI was developed as the key center of Ukrainian nuclear physics, becoming a symbol of the cutting-edge, globally integrated Ukrainian science. It is difficult to see any military strategic gains from shelling UFTI other than the sheer will to destroy an institution which signaled Ukraine's ambition to develop national science. The craters, broken windows, gaping holes in the walls and the collapsed roof of the solid state physics lab, the research community exiled to other parts of Ukraine and other countries – such is the coda in a country that hosted a version of the Soviet Russian modernization.[50]

PHOTO: WIKIMEDIA COMMONS

Slag dump from Azovstal plant on Azov sea coast, Mariupol, Ukraine, 2014.

Hosting and Inheriting: The Epilogue

This essay attempted a synthesizing reflection of the halos of destruction emanating from the infrastructural modernization of Ukraine as the country sought to disentangle itself from the colonial dependency on Russia. "Halos of destruction" is an apt metaphor, capturing the synchronicity of economic and environmental, but also social and cultural damage inflicted through the long cycle of the building, operation, ruination and then intentional destruction of the industrial infrastructure. It is important to recognize that the ongoing destruction of Ukraine's infrastructure is causing not only direct economic damage, but also a severe loss of memory, public knowledge and archival materials, because the industrial infrastructures are fundamental components of the twentieth century's material culture of modernity.[51] Russia's war is posing a significant threat not only to the traditional heritage, such as monuments, museums and art galleries.[52] It also obliterates the industrial heritage-to-be as well as the history of Ukrainian industrialization that remains to be written. This is particularly true of the Donbas region where the industrial past is entangled with local identities.[53] As Sklokina and Kulikov showed, the war securitized those heritage-making initiatives where attempts to study and preserve elements of the Soviet industrial legacies was identified with a "separatist"

stance, leading to animosity and polarization among heritage practitioners. Material remnants of Soviet industrialization were caught up in the information war.[54] On the other hand, some of those remnants may no longer exist, crushed as, for instance, the plans for the future regeneration of post-industrial regions through cultural tourism, as in the case of Soledar, a city that hoped for industrial heritage revival by using its salt mines as an attraction, but which has been totally destroyed in the battles in late 2022.

It is not possible to overestimate the significance of the loss of material cultures of industrialization in Ukraine. Making sense of the legacies of Soviet industrialization as a difficult heritage could be a productive approach to dealing with the halos of destruction. Ukraine has hosted the layers of modern infrastructures and their difficult legacies, the approach of care emerging as the country started building its economy after 1991. At the moment of writing, these infrastructures have taken the Ukrainian nation hostage because, as points of vulnerability, they are targeted by Russian missiles seeking to cause not only disruption in production and energy supply, but also as part of environmental warfare, threatening toxic contamination. The destruction of the industrial infrastructures can be considered a destruction of the collective memory and archive. A debate about lost values of the material culture of Ukraine's industrial history will need to be an important part of peace building and reconstruction. ●

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Destroyed buildings in central Bucharest after the devestating earthquake of 1977. The earthquake became the starting point for Ceauşescu's gigantic project of "modernization".

PHOTO: WIKIMEDIA COMMONS

The Bodies and Memories of Murdered Cities

by **Irina Sandomirskaja**

1.

On a sunny day sometime in the 1970s, a young man, an art student, was riding Tram 26 around the inner circle of the city of Bucharest. He had with him a film camera and some 16 mm celluloid film, expired. His idea was to film in secret (direct filming was forbidden) through the window while riding the tram. In the early 2020s, the same person, Ion Grigorescu, now almost 80 years old and a worldwide acknowledged artist of European photo and film, was being interviewed in his studio in almost the same location he had filmed half a century before, telling the story of that early film project, *In Beloved Bucharest*, 1977.[1] He had conceived the idea of the filming session after the disastrous 1977 earthquake, 7.2 on the Richter scale, that took the lives of over 1,500 people, with almost 1,400 dead in Bucharest.[2] This led Ceauşescu to declare a state of exception, and later he decided there was an opportunity to make use of the natural destruction of the city in order to carry out a gigantic project of "modernization, systematization, and civilization".

The disaster of communist systematization first hit Romanian villages with property confiscations in 1947, followed by evictions and forced relocation of the population from villages into urbanized townships; later, a campaign of modernization of towns and cities was launched, erasing historical centers and replacing them with "civic centers". A still later invention, the notorious

The so-called Ceauşescu Palace in central Bucharest. PHOTO: TED MCGRATH/FLICKR

Ceauşescu Palace in central Bucharest, believed to occupy an area approximately equal to that of the Pentagon, was also originally conceived as a civic center before it ultimately, as early as the 1980s, assumed the shape of a colossal representation of the dictatorship. However, the erasure of Bucharest only started in 1974, when Ceauşescu reportedly declared that it would be a good thing if the capital city were demolished completely. Modernization continued until the end of Ceauşescu's time in power in 1989, the destruction surpassing the losses the city had suffered during WW2 and in the earthquake, taken together.[3] What Grigorescu was documenting in 1977 was just an initial stage.

It had started as a typical socialist utopia of urban improvement, with the intensification of housing construction. The capital city's working-class outskirts represented a perfect object for the experiment, when old industrial and living areas, some of them pure ghettoes, started undergoing a transformation into modern urban environments with industrially produced residential buildings (similar to innovative townships in the already depopulated rural areas). This was part of Ceauşescu's plan to upgrade Romanian society in the socialist spirit, by forcibly eliminating class differences between the city and the village. By the end of the 1970s, Ceauşescu was already running Romania singlehandedly as a family business and a visit to North Korea motivated him to finalize his personality cult by giving unrestricted power to the security services.[4] The destruction caused by the earthquake proved useful for the plans of urban sanitation and development, the cleansing of old industrial areas together with their inhabitants. The widely advertised construction of the city subway finished the job of turning the earth upside down that the earthquake had started. Thus, the young Grigorescu's ride on Tram 26 yielded unique visual testimony of the last days of the worker community on the outskirts of Ceauşescu's capital: at one and the same time, the site of Europe's largest and most controversial 20th century project of urban redevelopment and an extreme case of totalitarian modernization by massive destruction of material environments, expropriation of property, expulsions and deportations of the population, and severe political repression against those who protested.[5]

> This was part of Ceauşescu's plan to upgrade Romanian society in the socialist spirit, by forcibly eliminating differences between the city and the village.

In the process of Ceauşescu's "systematization" of Bucharest's historical center, a territory of five square kilometers was cleared of all buildings, the streets of the old town wiped out to give way to broad, straight avenues, and the already mentioned Ceauşescu palace was erected, a weird mixture of probably all totalitarian architectural styles including the Stalinist empire and its North Korean derivative. Nowadays, the impressive statistics of the destruction of Bucharest and picture of the palace, perversely attractive to the lover of the communist sublime, can be found on every internet page promoting international tourism in Romania: the palace, the anachronistic absurdity emblematizing totalitarian rule by brutal force and colossal pretentions, has nowadays become an international conference center, an object of popular culture, and a place of interest for tourists.[6] As to those districts Grigorescu secretly filmed in 1977, no one seems to remember them any longer, nor to care about those people who lived there and happened to be captured on the young art student's expired color film. Nowadays digitally preserved, the faded images of *Beloved Bucharest* return us into the dusty streets of a poor industrial workers' suburb, men and women walking around and looking busy, concentrated on the urgent needs of daily life; each of them, as Grigorescu noticed later, carrying something in their hands: a bag or a parcel, or pushing a cart, or driving a horse wagon; running the petty errands of everyday life; surviving on meager resources between two catastrophes; first, the earthquake, and then, the communist urban improvement campaign.

2.

At about the same time that Grigorescu was taking his Tram 26 rides, Marshall Berman, a humanist Marxist, author, and professor of political science at the City College of New York, was visiting those places where he had spent his childhood with his family, the 170th streets in the South Bronx. What he saw there was "a great crime without a name. Let us give it a name now: *urbicide,* the murder of a city":

> **The facades were charred black, some of the upper walls had collapsed, the windows all were smashed (probably by firemen – this must have been one hell of a fire) and the sidewalks were still strewn with debris. As I turned onto 170th Street and walked downhill for about half a mile east I saw a great panorama of recent ruins unfold before me. Some had been sealed off with cement blocks.**[7]

The South Bronx of his childhood memories, a living community of worker families, immigrants, and Black people, was being depopulated and destroyed by city planning authorities in the program of urban development. The greater part of the area was to be demolished to give way to two expressways. In order to facilitate "slum clearance", "shrinkage", and "dehousing" and to make the area attractive for investors, the South Bronx first had to be destroyed economically. Already in the early 1950s, the territory with all its homeowners had been "redlined", i.e., indicated on city maps as planned for demolitions. Then, water and electricity supplies were cut, to keep away the "unproductive" groups of population, In the aftermath of the war, the 1950–70s in the US became the golden age of urban planning according to the principle "draw lines from point A to point B, obliterate everything in between".[8] In his systematization of Bucharest, inspired by the examples of Stalin's "revolution from above" and Mao's "great leap", Ceaușescu used organized state violence and technology in an attempt to eradicate differences between the urban, suburban, and rural populations. In the vision of Robert Moses, the father of the constructive destruction of American cities, the future of the city belonged to highways, bridges and tunnels, massive housing projects, and huge recreation areas, all of these to be implemented by centralization and concentration at the expense of poor and mixed communities: in its own way, a neoliberal economic "revolution from above" using

US President Jimmy Carter tours South Bronx, 1977. "The presidential motorcade passed block after block of burned-out and abandoned buildings, rubble-strewn lots, and open fire hydrants, and people shouting 'give us money!' and 'we want jobs!'" wrote *The New York Times* the next day. PHOTO: WIKIMEDIA COMMONS

corporate violence to radically change the social structure of American cities; in the case of the South Bronx, among other purposes, to stop the Puerto Ricans and rural Black people from living in the city.[9]

> **Between 1970 and 1975 the South Bronx lost approximately forty-three thousand housing units. This housing loss continued unabated with about seven thousand fires erupting in the South Bronx between 1975 and 1977. By 1977, there were more than three thousand lots and buildings that were considered vacant and covered more than five hundred acres. There were also more than six thousand nine hundred residential parcels that owed taxes for at least one year and would eventually be subject to municipal takeover. In the 1970s, the South Bronx lost 309,471 residents out of 772,589.**[10]

Predictably, at the same time as bulldozers and arsonists, there came criminality, "an explosion of violence that began in the 1960s and that went on until the 1990s". The Bronx plummeted: "a jungle stalked by fear, seized by rage," "a foreign country where fear is the overriding emotion in a landscape of despair;" a place that is "violent, drugged, burned out, graffiti splattered and abandoned [...] burned-out buildings, shabby streets, sidewalks with overgrown grass, empty lots filled with garbage, disemboweled fire hydrants, crime stories, and suffering residents."[11] What Berman encountered there in 1980 was "the site of one of the greatest recent ruins today outside Beirut".[12] Or, in another simile by another witness, "Dresden after the war".

3.

I did not realize at once that it could indeed be Dresden I was seeing in film footage that documented a large German city that was being destroyed in the Allies' firebombing and captured with aerial filming from a camera installed on board the bomber. I was watching Sergei Loznitsa's film *The Natural History of Destruction* (2022): a cinematographic interpretation of W. G. Sebald's 1999 *Luftkrieg und Literatur*, or, *On the Natural History of Destruction* as the book was titled in the English translation. Loznitsa made his version as a compilation of WW2 documentary footage related to military aircraft production and aircraft warfare from German, British, and US archives and museum collections. One could easily mistake the moving image of the killing of the city for an animated diagram of the birth and death of galaxies in the emptiness of the outer space: a black abyss with flashes of flight sparkling here and there in the darkness, getting larger and joining each other, growing in size, and gradually covering the black background with large areas of blinding white light. In slow motion, a shot taken from high altitude to document an explosion looked like a fast-forward projection of the natural history of the Earth: erupting from under the dense blanket of clouds below the aircraft, there evolved a protuberance of dust, stone, vapor, and smoke; for a fraction of a moment, the cloud looks like a gigantic crystal, then like a coral, then like a mushroom. The murder of the city seemed to unfold as if to reproduce the stages in the evolution of life; the four elements of nature – air, fire, water, and earth – all mobilized in urban annihilation.

> One could easily mistake the moving image of the killing of the city for an animated diagram of the birth and death of galaxies in the emptiness of the outer space.

Metaphors aside, what *is* natural about urbicidal destruction? As biblical prototypes of urbicide, Marshall Berman cites the many sieges of Jerusalem in the Books of Lamentations and the Prophets[13]; the extermination of Sodom and Gomorra could also be recalled; as military prototypes, the epic fall of Troy or the proverbial destruction of Cartago. In either case, destruction was not occasioned by natural forces but by acts of God, in the former case, or by decisionist action, in the latter. Going back to the story of the urbicide of Bucharest, a natural disaster, the earthquake, did give it an initial impetus or rather a pretext. Yet the annihilation itself, the process documented by Grigorescu, was driven by the modernizing ambitions of a totalitarian regime and the dictator's profoundly misguided idea of engineering a social reform in conformity with Marxist theory. The scale of intervention could become truly gigantic because socialist Romania had by that time already eliminated, quite violently, all private property, and the cost of human life was practically zero. Comparably, in an economically, legally, and administratively more complicated way, but similarly at the expense of the least propertied and protected groups, the New York housing and urban planning authorities could also erase the community of the South Bronx.

The central and the most important part of Loznitsa's *Natural History* is dedicated to the artificial character of modern destruction; it is a detailed representation of production labor in the preparation of annihilation. The original footage used in his compilation shows industrial processes in full order and in every detail, each organized set of operations performed by trained personnel. Engineers in design bureaus and material testing laboratories; men on the floor working heavy powerful machines cutting, forging, shaping, bending, forming, boring, soldering and welding, fixing and fitting things; technicians working in assemblies and subassemblies, mounting onboard equipment, workstation by workstation; pilots navigating the aircraft, gunmen working their guns and cameramen working their film cameras; finally, the pressing of the button to release the bombs.

SEBALD WRITES IN HIS book that initially, the idea of the story as a "natural history" belonged to Baron Zuckerman, or Solly Zuckerman, who planned to use this title in his own account of the effects of firebombing on German cities. Zuckerman, a zoologist and a pioneer of operational research, served as scientific advisor for the Allies'

A view over Dresden from the City hall after the bombings in February 1945.
PHOTO: WIKIMEDIA COMMONS

bombing plan. That book was never written and Zuckerman later confessed that he did not possess eloquence enough to describe what he had seen; when Sebald was interviewing him in the 1980s, apart from unconnected details, Zuckerman could not remember anything of his experiences from that time.[14] For Sebald, the central problem that motivated him to write his essay was the post-war silence about these cases of military urbicide and their disastrous consequences, whether in German postwar literature or in witness accounts. A natural history of the catastrophe and a history of its artificial oblivion: what had happened in 1943–45 was preserved in an almost complete silence, interrupted by a few novels and occasional survivors who could only express themselves in stereotypical cliches: "the dreadful night", "we were staring into the inferno", etc.[15] Sebald's task, and after him Loznitsa's, became that of "witnessing for the witness" (Paul Celan): excavating the evidence from under the silence of dead metaphors.

Sebald starts with statistics: During the 1943–45 Allied firebombing, one million tons of bombs were dropped, one hundred and thirty one cities and towns attacked, 600,000 civilian victims killed, three and a half million homes destroyed, seven and a half million people left homeless, 31.1 cubic meters of rubble per person produced in Cologne, 42.8 in Dresden, and so on and so forth.[16] For instance, a firestorm: July 27, 1943. Ten thousand explosive and incendiary bombs dropped on densely populated districts of Hamburg. Doors and windows smashed and torn out of frames; attics ignited with incendiary liquid, lower levels hit with firebombs; an area of twenty square kilometers was on fire immediately; another five minutes, and "a firestorm of intensity that no one would ever before have thought possible". A natural process of combustion, human bodies burning alongside all other matter, organic and inorganic:

> **The fire, now rising two thousand meters into the sky, snatched oxygen to itself so violently that the air currents reached hurricane force, resonating like mighty organs with all their stops pulled out at once. The fire burned like this for three hours. At its height, the storm lifted gables and roofs from buildings, flung rafters and entire advertising billboards through the air, tore trees from the ground, and drove human beings before it like living torches.[17]**

Then, there follow other stages "in the natural order": the stench all over and parasites thriving on unburied bodies; flamethrowers used to cut through the dense swarms of flies surrounding the remainders of buildings

where people had been hiding in cellars, finger thick maggots covering floors and steps; rats "in great clusters on the roads, settled in heaps to copulate on ruined walls, [...] basked, weary and satiated, on the splinters of the windowpanes."[18] And still another "natural order", that of the urban community under severe shock: "social life, that other natural phenomenon."[19]

IF SEBALD ACCUSES German post-war literature of silencing and trivialization, Loznitsa the visual artist problematizes historical blindness. The sight of urban destruction is a forbidden spectacle; most of the footage was originally restricted for use by responsible authorities. Nowadays, it is exploited as infotainment by military history channels praising ingenuity in technological solutions, dedication in the war effort at home, and heroism in battle. Loznitsa shows the reverse side, the ultimate truth of urbicide: endless panoramas of whole streets and quarters of burnt out ruins, empty windows looking into the open like dead eyes; passages barricaded with debris; bodies and body parts mixed with dust and broken bricks, charred, swollen, and crushed; as a counterpoint to the labor of producing destruction, the labor of urban reconstruction: clearing the rubble, digging out the survivors and the dead buried in their shelters; corpses laid out in neat rows for families to identify missing ones or stored under a half-collapsed roof in a gym, row after row, numbered and labeled, the priest at the improvised altar preparing for a funeral service.

It is a natural order, Sebald says, not a human, social, or political one, that regulates survival inside a murdered *polis*. First, you hide; then, you look for food and shelter; then, you try to find your family, whether dead or missing; then, if you can run, you run. Loznitsa includes a long sequence representing those human flows, old people, women and children, almost all walking and many barefoot, stepping on and over the rubble, over dead or still living bodies underneath (speak about survivor guilt and shame); carrying things in bags and parcels or pulling carts, sometimes scantily dressed, one even wearing pajamas. A mass of *vita vegetativa* in human shape flowing across the environment of total war; bare life seeking mere survival and organized only by automatisms of affect and instinctual reactions of the body responding to shock.

The remains of a house in the Casbah of Algiers destroyed in an explosion on October 8, 1957. PHOTO: WIKIMEDIA COMMONS

4.

When comparing the landscape of the razed South Bronx with Dresden after the war, witness reports foreshadow Paul Virilio's theoretical thesis:

> **The city, the polis, is constitutive of the form of conflict called war, just as war is itself constitutive of the political form called the city [...] before being its actual perpetration, the political conflict is first its economic preparation [...] associated with the management of the 'theater of operation', with the training ground where war will actually take place.[20]**

Urbicide motivated by administrative rule and economic interests as in Bucharest or the South Bronx, on the one hand, and urbicide as a military action of extreme political violence, on the other: the two dispositives do have a common origin in the history of colonial modernity. It was during the French colonial invasion of Algiers in the 1830s that urban warfare was invented and practiced for the first time. The French marshal Bugeaud with an army of 100,000 confronted the Algerian resistance that comprised a mere 10,000 fighters and could not subdue it for seven years until he finally found a way of eradicating the guerilla's popular support by systematically pulling down whole neighborhoods. It was only when Bugeaud finally destroyed Algiers' Casbah, the citadel and the holy center of the city, that the war could be ended. In 1847, he published a book based on his experience in Algiers, *La Guerre des Rues et des Maison*, the first ever

manual of modern urban warfare.[21] Even though acts of extreme cruelty committed by Bugeaud's troops in the Algerian war were later criticized in the parliament at home, this did not diminish the value of his invention, since the urbicide of Algerian neighborhoods prompted similar measures to be used in urban policies at home where cities, as the anti-urbanist Bugeaud believed, were developing in the wrong direction, suffering from the effects of industrial revolution. A pioneer in urban military destruction, Bugeaud also discovered how closely city annihilation was connected to city planning when he started demolishing local settlements to create passages for his troops. At home, he proposed using methods developed in urban warfare to fight the vices of industrialization: corruption, poverty, crime, and diseases eating up the overpopulated, pauperized cities. His proposal was to forcibly remove the poor and make them settle in the countryside to work in agricultural production.[22] As if to confirm Bugeaud's fears of urban unrest, and ironically just a year after the publication of his book, the discontent exploded in the 1848 revolution, which in its turn provoked the megalomaniac campaign of modernization and securitization of Paris by Baron Haussmann during the 1850–60s.

TO FOLLOW VIRILIO'S thinking, not only are city and war mutually constitutive of each other, but also city and social war, revolution. Haussmann redeveloped Paris to increase control and prevent the repetition of 1848, but instead his intervention ultimately resulted in the disruption of the social structure and could not prevent either the surrender of Paris in the Franco-Prussian war, or, after France capitulated, the seventy days' rule by the Commune of Paris, the prototype of Lenin's proletarian revolution.[23] In the 20th century, the most influential project of modern urban development, Le Corbusier's *Ville radieuse* from 1935, was already itself pure spirit of revolution incarnate.[24] A specter of destruction haunted Le Corbusier's modernist city despite its radiance, given the way he designed it remembering the Great War's most destructive inventions, the gas attack and the air raid.[25] There is a diagram that concludes and sums up Le Corbusier's "Plan" on the last pages of the book, representing a model that perfectly balances war with peace: destruction vis-à-vis construction, mobilization vis-à-vis planning, and the army vis-à-vis labor (including technology and finance). Urban war and urban peace, presumably two antagonistic economies, are here depicted in the shape of symmetrical semi-spheres as two mutually complementing inseparable entities, the two halves of one global totality.[26]

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"IN BOTH AUTHORITARIAN and democratic societies, ideologies of urban planning have often actually deliberately invoked metaphors of war and militarism to legitimize violent acts of planned transformation."[27] Urban planning makes its arguments using the language of military destruction; urban warfare equally efficiently explores urban managements' metaphors of sanitation, with appalling examples of extremely cynical word usage in the Nazi-organized Jewish ghettos, or the destruction of Sarajevo in the Serbian campaign of "ethnic cleansing", or the Russian army razing of Grozny, according to the UN, "the most destroyed city on the Earth" for the purposes of *zachistka*, literally "cleaning up". Similar fantasies of purification also concern cities' histories and memories. In the Radiant City, there is no place for the unhygienic "waste" of the past; according to the "Plan" history must be subject to "sanitation and sanity". Administrative power, or "authorities in decay", must give way to true Authority, "authority reborn" with a capital A. "[...] Waste is strangling us, bewitching us, bogging us down, sucking us dry of all our substance [...] The 'Plan' kills waste: whereupon life will become a thing of dignity and sanity again". This requires "decisions as pregnant with consequences as a declaration of war. A call to arms in the field of organization. Action and conquest [...] High command and army, machines and transportation, discipline – ALL EXACTLY THE SAME AS FOR WAGING WAR!"[28] Ironically, urban destruction has developed on a multidisciplinary basis, as construction also has : "... the work of cartographers, geographers, planners, of architects, engineers, sociologists, anthropologists, psychologists, and statisticians running through the atrocities and place annihilation of the twentieth (and the twenty-first) centuries [...] The division between urban planning geared towards urban growth and development and that which focuses on attempts at place annihilation or attack, is not always clear."[29]

5.

During five days in August 1914, the German troops destroyed a great part of the mediaeval Belgian city of Louvain and erased its age-old symbolic values including the university library with its unique collection of ancient manuscripts, the thousand year old cathedral, and other objects of national value, the monuments of Belgium's historical heritage. Using artillery, arson, looting and killing both inside the historical city and in the surrounding countryside, the occupiers subjected Louvain to a systematic purposive annihilation, physical as well as moral. By staging the humiliation and murder of Belgium's most symbolically significant city, the German military were seeking to subdue resistance – which, as war historians proved later, in fact did not exist. They were deceived by their own fears left from the Franco-Prussian war, the memory of resistance by French free shooters (*franc-tireurs*), the urban guerilla that had caused the Prussian occupation army much pain. Even if there had been anything like this in Louvain, the Hague Conventions in 1899 and 1907 had acknowledged *franc-tireurs* as a legitimate form of resistance – but as it turned out, there weren't any. Germany, on the other hand, was acting in gross violation of international law, since it had broken into Belgium against its neutrality in order to gain an easier passage to France.[30] The sacking of Louvain and atrocities committed against the city could not be justified either as military necessity or as collateral damage. After the war, Louvain and some other Belgian towns and villages that had suffered cultural damage were memorialized as *villes* and *villages martyrs*; the annihilated historical monuments became objects of a civil religion, a modern secular cult of *patrimoine martyr*.[31] The Catholic idea of martyrdom was thus projected onto the fate of a city and its community to memorialize historical events as extreme violence exercised against absolute innocence. As a condition of atonement and reconciliation, post-war public opinion demanded the total reconstruction of martyred monuments in their original image, a demand that had been originally put forward after the sudden collapse of the St Mark's Campanile in Venice in 1902. The slogan "as was, where was" (*com'era dov'era*) was invented then, the campanile was reconstructed in its (almost) original shape, the works took ten years, and the episode triggered the spontaneous formation of one of the earliest urban preservation movements in Europe.[32]

As distinct from the catholic European South, the atheistic Soviet Union chose a different strategy for valorizing

Louvain after the bombings of 1914. PHOTO: WIKIMEDIA COMMONS

and memorializing its cities, but public movements and accompanying affects were also organized after the pattern of a civil religion. The honorary status of the hero city decreed in 1965 was supposed to produce collective patriotic emotions with a masculine tone and to memorialize the spirit of unbreakable dedication and self-sacrifice rather than the pure innocence of absolute suffering in martyrdom. As a ritual of distinction, retrospectively awarding the title to select cities with an exemplary military history remained in practice until the end of the USSR and served the purposes of militaristic propaganda and patriotic education since the memory of the Great Patriotic War, already manipulated many times and falsified for various ideological purposes, demanded periodic renovations.

THUS THROUGH ALMOST the whole of its post-war period, the Soviet regime was taking measures to make the public forget about the fate of hundreds of thousands of civilian victims. During the years of the siege, Leningrad's death rates were not simply classified but omitted even from top secret statistics reports that the NKVD compiled for the Smolny and the Kremlin. Civilian Leningrad had been refused rescue; they were left to their own devices inside the locked city, and perished by up to ten thousand civilians per day, frozen, famished, heavily shelled from the outside and ruthlessly policed from the inside. After the war, the authorities took care to censor witness accounts; the Leningrad Affair was an act of ruthless repression against the city that sealed these memories for a long time. It was only in the mid-1960s that occasional public mentions of civilian losses were allowed, albeit only as part of the permitted narrative of heroic defense, and by the end of the 1980s more or less genuine witness accounts started seeping through the barriers of censorship. In the post-war anomie, when those who had been evacuated started returning to the devastated city and

claiming their lives back, the authorities chose to do little to compensate survivors or to improve their living conditions. Instead, the city and the center both encouraged a colossal project of facsimile reconstructions of the 18th century imperial palaces in Leningrad's suburbs; works started immediately after the war using the citizens' free labor, to demonstrate still another self-sacrificial feat of heroic Leningrad's enthusiasm and patriotism. With time, however, and most aggressively under Putin's rule, these re-constructions were assigned a different meaning, that of the uninterrupted continuity of Russia's imperial tradition and its unfading splendor.[33]

Even less memory remains of the fate of other hero cities' civilian populations. The name *Stalingrad* is associated with WW2's bloodiest and deadliest battle, but not the city itself, especially since the city has changed its name (as also has Leningrad). Statistical data on civilian death and survival in Stalingrad was strictly classified until very recently and even nowadays experts vary widely in their assessments, having to work with chaotically organized, incomplete, and expurgated archives. Out of Stalingrad's own prewar population of 450,000 and the approximately 400,000 evacuated from occupied areas during 1941–42, only around 10,000 remained in the city after the battle was over, including 1,000 children. The colossal tragedy of Stalingrad's civilians remains unacknowledged by the state even today, and despite active historical research it is still unknown to the general public.[34] For the purposes of ideology and international representation, the already mentioned Leningrad suburbs or the ancient kremlins and churches in the old Russian cities of Novgorod and Pskov were gradually re-erected after the war, to demonstrate the regime's care for national symbols and cultural treasures. The ruins of Stalingrad were wiped out clean and the city was signed off to be built over from scratch.

> The name *Stalingrad* is associated with WW2's bloodiest and deadliest battle, but not the city itself, especially since the city has changed its name.

Not only Stalin's socialist realist architects and city planners but also international modernists before and after the war saw the catastrophic military destruction of old cities as a blessing in disguise for new construction, allowing unprecedented freedom for large scale experimentation in replanning built environments and thereby re-engineering urban social realities.[35] In the very year 1942 that saw the total destruction of Stalingrad, urban architecture's greatest authority and progressive leftist Lewis Mumford in the USA was anticipating the task of postwar planning which was "not simply one of rebuilding demolished houses and ruined cities [... but] that of replacing an outworn civilization."[36] Destruction offered opportunities, and Mumford wished Boston, his own city, had suffered destruction on the scale of Coventry and London during the Blitz; he regretted that pre-war demolitions had not gone far enough, and prescribed for future city planning to continue doing "... in a more deliberate and rational fashion, what the bombs have done by brutal hit-or-miss."[37] Also, in prewar Germany, a military disaster was awaited and even desired by urban professionals as a prerequisite for renovation, and later, the architects of the Nazi *Ostplan* projected total destruction of Eastern European cities as a step towards their Germanization via re-planning. Even in liberated and destroyed Warsaw, perceptions were similar. The leading city planner in postwar Warsaw, once himself a prisoner in Majdanek, suggested the total erasure and overbuilding of whatever was left of the Warsaw ghetto after its demolition by the Nazis, in which case he saw "reasons for redesigning the entire area, which was originally characterized by irrational development."[38]

IN A SIMILAR VEIN, one of the highest Stalinist officials declared that the post-war situation offered "rich opportunities for creating truly socialist cities with large artistic ensembles and well thought-out residential building projects that fully satisfy today's requirements" and opened up an area for "enthusiastic commitment and extensive initiative on the part of the Soviet architects". There seemed to have remained no wish or need to remember; instead, one could now "take into account the abundance of sun, the Volga, the direction of the wind, and the sand", thus opening a new page in the city's "natural history of destruction."[39] Several plans of Stalingrad reconstruction were considered and then rejected, including one that proposed for the city of Stalin's name to "establish a cult of the HOLY MOTHERLAND [...] create a TEMPLE OF THE HOLY MOTHERLAND", accompanied by the ringing of the bells. In the meantime, residential areas were planned to be rebuilt with prefabricated wooden, plastic, and plaster houses with 30 per cent equipped with running water and sewage and 20 per cent with public heating.[40] Surrounded by the environment of actual ruins and

imaginary temples, people were making a living for themselves as best they could:

> **Altogether there were 14 earth huts, each accommodating 200 people. There was a canteen for 2,000, consisting of two rooms. Food was prepared in seven cast-iron 700-litre cauldrons. There were sanitary and household services facilities, including a 30-person bathhouse, laundries, and disinfection chambers.[41]**

6.

Urbicide is not a term of law and therefore has no formal legal definition. Moreover, there is no agreement as to which kind of law it should be subsumed under if approached from the legal point of view, as a criminal form of warfare or as a crime against humanity and a component of genocide, a category that only received a formal interpretation in the 1948 UN Convention.[42] The destruction of cities as a warfare strategy specifically targeting large groups of civilian population was not taken up by the Nuremberg trials, probably one reason among many others for Hannah Arendt to characterize the trials as "an abysmal failure".[43] Fighting, as Marshall Berman did, against predatory urban renewal campaigns in American cities, activists demanded justice for the victims of city murders based on the concepts of civil rights. In the wake of the dissolution of Yugoslavia, with the siege of Sarajevo and the destruction of Mostar, urbicide achieved a new meaning, as a specific form of extreme political violence, most prominently in the reactions of the architects who pointed out that the built environment, and especially symbolic pieces of historical heritage, were directly targeted in the ethnocidal warfare.[44] By some, urbicide was analyzed as political violence against the broadly understood cosmopolitan urbanity;[45] others criticized urbanity as a typical liberal Western attribute; still others analyzed urbicide as a factor of neo-imperial and neo-colonial domination and war.[46] In the meantime, the day I was writing this, December 6, 2022, like too many days before this year, started and would end with a story about the latest urbicide, just one story among too many. From inside the almost totally destroyed Russian-occupied Mariupol, the reporter was telling me about people struggling to stay alive in the ruins, abandoned or, which is more probable, intentionally ignored by the occupation authorities, striving without food, light, heating, or water; fixing broken walls and windows with pieces of cardboard where available, pleading for help and sending SOS messages into the outer world written on windows covered with frost. News reports are haunted by the ghosts of the murdered cities of the past, Louvain, and Hamburg, and Leningrad, and Stalingrad, and Grozny, the UN's (for the moment) "most destroyed city on the Earth". Radical violence reproduces itself and transcends its own limits; every time it occurs, it happens to us as a repetition of previous evil and at the same time as something entirely new, something that has no precedent, and is therefore unspeakable, dominated by political clichés and misused catchwords. This is what Hannah Arendt meant in the 1950s by the "horrible originality of totalitarianism" (the word *totalitarianism* itself being a cliché and a catchword): "... not because some new 'idea' came into the world, but because its (totalitarianism's) very actions constitute a break with all our traditions; they have clearly exploded our categories of political thought and our standards of moral judgment".[47]

> **Not only does the actual meaning of every event always transcends any number of past 'causes' which we may assign to it, this past comes into being only with the event itself. Only when something irrevocable has happened can we even try to trace its history backward. The event illuminates its own past; it can never be deduced from it.[48]**

Every new event of urbicide transcends the language already prepared by the lessons of previous urbicides to account for it. Violence is mute, Hannah Arendt reminds us: it starts where speech ends; it starts by destroying speech altogether, with its inherent categories of understanding. Watching the 20th century of urbicidal, genocidal, ethnocidal history repeating and transcending itself in the evil of the present day, we are learning to regain speech, which is just one step, but a crucial one, towards the curbing of violence and evil in the present, even though we are not able to predict or prevent it in the future. Each time when destruction transcends itself, the work of understanding must start anew. ●

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Stopmodernism: Russia's War against the Global Environment

by **Alexander Etkind**

This essay combines a general overview of Russia's role in the climate crisis and energy transition with more specific ideas aiming to connect the environmental issues with the Russian war in Ukraine. Two assumptions are relevant here. First, our world is entering a new stage of modernity. Second, Putin's war is an attempt to stop it: *stopmodernism*, as I call it with an unwanted irony. This essay's ideas are based on my two recent books.[1]

Any concept of modernity comprises descriptive and normative components. The Anthropocene has accelerated their fusion. A new type of modernity – reflexive, sustainable, decentralized – would help us to survive the global environmental crisis. Negotiated between the planet and its humans, the new sustainable order is very different from the previous types of modernity, such as Max Weber's bureaucratized, differentiated modernity of the late 19th century. Our new modernity is also vastly different from the modernity of the 20th century – the ever-growing conglomerations of steel, oil, and gunpowder, structured by the competing nation-states with very little place for men and women. This was *paleomodernity*, and the Soviet Union was one of its champions.

The new order of relations between people and nature I call *gaiamodernity*, deriving the name from Gaia – the planetary system of life and matter that includes us all.[2] Unlike the premodern Leviathan, a hypermasculine monster who frightens his people into behaving and producing, our modern state is a part of Gaia: a feminine organism that includes nature and humans in one mammoth body, benevolent but unforgiving. While the purpose of the Leviathan was to halt history for the sake of the ruler, Gaia lives and changes with us. Our society is still a *risk society*, but our state is developing into the new *state of nature*.[3] On a more technical level, the main difference between the two modernities is in energy use. Paleomodernity defined progress in terms of the expanding use of nature: the more resources used, and the more energy consumed, the higher the civilization. For gaiamodernity, in contrast, the further advancement of humanity requires less energy used and less matter consumed per every new unit of work and pleasure.

Gaiamodernity is real, but not quite; it is also utopian. This modernity is utilitarian, provided that it includes the elements of nature *and* people in its calculus. It is democratic: experts represent nature, but judgment is left up to the people. It is holistic: recovery from a polycrisis, with its over-differentiation, requires multidirectional, intersectional ways and insights.[4] Most importantly, it is reflexive. Having failed in so many other tasks, we contribute our reflexivity to the life of Gaia.

IIASA is housed in the Blauer Hof Palace in Laxenburg, Austria since 1972.
PHOTO: WIKIMEDIA COMMONS

Putinism against Gaia

The burning of fossil fuels created emissions that have led to climate crisis. The truth was as simple as that, but there were vested interests in denying it. Founded after the failed revolution of 1968, an influential international organization, the Club of Rome, warned the global community about the planetary crisis, and urged that limits be set to economic and demographic growth. From the start, the founders of the Club of Rome recruited a remarkable member of the Soviet elite, the philosopher and governmental official Dzhermen Gvishiani. He took part in the early forums of the Club and later, in 1989, created the Soviet Association for the Club of Rome.[5] A son-in-law of Aleksei Kosygin, the powerful Soviet prime minister, Gvishiani contributed to many important reforms of the late Soviet period. Deputy Chairman of Gosplan (1985–1986), he was one of the founders of the International Institute for Applied Systems Analysis (IIASA), a global think tank in Vienna that trained, for better or for worse, the future stars of Russian governments such as Anatoly Chubais, Petr Aven and Sergei Glaz'ev. Evgeny Primakov, the Prime Minister of Russia in 1998–1989 and a rival of Putin, was married to Gvishiani's sister; Primakov was also a member of the Club of Rome. Better known for its work on privatization, IIASA also focused on the climate and environmental issues. Due to Gvishiani, the IIASA and the Club of Rome, the post-Soviet economic transformation was informed by the global climatic awareness. Unusually low oil and gas prices in the 1990s invited both economic reforms and the awareness of the limits to growth.

With the rise in oil prices in the early 2000s, Putin's experts realized that climate awareness was a threat to the country's existential interests. Russia's climate denialism emerged along with the very first signs of the conservative turn in Russian politics. A great source for studying this turn are the writings of Andrei Illarionov, economic advisor to President Putin from 2000 to 2005. Having written volumes of analytics that denied the manmade character of climate change, Illarionov stated in 2004 that the Kyoto Protocol was something like an "international Gosplan" (referring to the USSR's State Planning Committee), only much worse. In fact, he said, "the Kyoto Protocol is akin to the Gulag and Auschwitz." What's the connection? – Kyoto was "a treaty of death [...] since its main goal is to stifle economic growth and economic activity in the countries that will accept the obligations of this protocol."[6] Illarionov's position was shared by many in the Russian elite – even its relatively enlightened part. However, he later emigrated to the US to serve as a senior fellow at the Cato Institute,

Washington DC. There, Illarionov's denialism was supported by the far right wing of the Republican Party and the Koch brothers, the Cato's major donors.

In 2009, the Russian government issued the Climate Doctrine, which acknowledged the manmade character of climate change. At the Copenhagen Climate Conference of that year, President Medvedev promised to increase Russian energy efficiency by 40%, a project that has never been delivered. The conference ended in chaos. Right before the summit, unknown hackers published thousands of stolen emails in the hope of demonstrating that climate change was forged by a scientific conspiracy. It is still not known who authored this lie, which went into history as Climategate., but it was largely responsible for the unexpected failure of the UN Climate Summit in Copenhagen. Two years later, a Russian server published yet another trove of 5,000 climate-related emails. Undermining trust on a planetary scale, these cyberattacks on climate science prefigured the larger operations that defined the politics of the 2010s.[7]

> Russia's absence from the climate deal turned the common cause into a zero-sum game.

Insisting that oil and gas exports were essential for the national economy, experts speculated on the possible benefits of climate change for Russia.[8] Watching the Siberian fires, the retreat of the permafrost and the massive release of methane, Putinism blessed Russia's role as an energy empire. Maybe global warming was manmade, but as a northern country with an unstable agriculture, would it not be better for Russia to be a little warmer? Wouldn't the melting of the Arctic ice open the Northern Sea Route to China and realize the ancient dreams of Ivan the Terrible? Along with climate denialism, other components of Putinism included homophobia, economic inequality and graft. They were all connected.[9] In July 2022, Putin explained the energy transition underway in European countries by their "love of non-traditional relations," a Russian euphemism for homosexuality; here, climate denialism merged smoothly with homophobia.[10] Machismo was a persistent feature of Putin's speeches; in August that year, he said that only masculinity could protect the governments of the world from the designs of American imperialism.[11]

Russia was the fourth greatest polluter in the world. Due to its domestic coal, China topped the list but Russian emissions per capita were much higher.[12] But the global emissions statistics count only those greenhouse gases that have been emitted on the spot by a national economy. However, for Russia, these emissions pale in comparison to those Russia has been co-producing with its trade partners in the West and the East, supplying them with oil, gas, coal, and petrochemical products. Comparing countries by their emissions and setting emission trading schemes, global governance counts all these emissions as produced by the buying country. However, the selling country, which gets a huge revenue from its carbon exports, clearly contributes to these emissions. They should be considered as co-produced like a co-authored paper or, to give a less academic metaphore, as a collective conspiracy.

Competing in carbon exports with the United States and Saudi Arabia, Russia before 2022 belonged to this *troika* that led the world in oil extraction. Russia was also the biggest exporter of natural gas worldwide, and the sixth largest producer of coal. As a result, by selling as much oil and gas as Saudi Arabia and Qatar *combined*, Russia was a very rich country indeed. If one summed up only these exported calories, Russia would top the world rankings. However, Russia consumes about a half of its oil, and three quarters of its gas and coal, domestically. Taking into account both parts of its fossil fuels – those that are burned domestically and those that are delivered and burned abroad – Russia is responsible for more emissions than any other country in the world, with a possible exception of the US.[13] Russia's massive energy exports secured huge amounts of cash to the Russian state and its oligarchs, reduced its accountable emissions, and alienated the population from the economy that had nothing to do with them.

In the 2010s, the climate crisis was developing rapidly. Heat waves, extreme weather events, fires and famines proved its existence to voters across the world. In Europe and other continents, democratic governments felt obliged to show their awareness of the crisis but largely failed to coordinate their actions. Drilling and petrochemical corporations spent billions on lobbying to block any meaningful decarbonization policies. During this period, climate action took neoliberal forms which were amenable to the Russian rulers. As a big country with a low population density, Russia could gain from the new trading schemes that were discussed in Copenhagen, Paris, and other climate summits.

Air pollution in Moscow, 2008. PHOTO: SERGEY ASHMARIN/MKAD

Euro-Atlantic leaders imagined decarbonization as a process of cooperation and shared sacrifice. Many of them had doubts and fears regarding decarbonization. But only the beneficiaries of the oil and gas trade knew precisely how much they would lose if this trade were to cease. The truth was that sellers of carbon would be hurt more than its buyers: everyone would suffer from the climate catastrophe and from the costs of transition, but only sellers of fossil fuel would be additionally impoverished due to losing their main income. Moreover, the dynamics of oil prices, the moving engine of gaiamodernity, would work for the oil-exporting countries in the opposite way than for the others. Growth of oil prices is the necessary condition for fuel-saving policies and for investments in alternative energy. However, this growth is beneficial for the exporting petrostates. The paradox is that high oil prices benefit climate action, but they also benefit the enemies of climate action. For various reasons, democratic state actors and climate activists underestimate this complexity. With some naivety, they thought that climate awareness would be equal at all nodes of the fossil trade.

Russia's absence from the climate deal turned the common cause into a zero-sum game. For the global efforts at climate action, Russia's denialism was a strategic obstacle.

Problems and Protests

The Global North and the Arctic are no less vulnerable to climate change than the South. In 1991, permafrost covered two thirds of the Russian territory, but has been in retreat ever since. Cities, pipelines, and railways sit on this melting land.[14] In terms of its vulnerability to the climate crisis, Russia is comparable to Canada and Alaska; but only in Russia do major cities such as Yakutsk and Norilsk sit on melting permafrost. Collapsing randomly, the permafrost releases methane, which accelerates global and local warming. In 2021, almost twenty million hectares of the Siberian forests were destroyed by wildfires; it was Russia's most destructive wildfire season ever. From the tundra to the taiga, Siberian ecosystems were changing from being carbon sinks to being active emitters.

Flaring of natural gas, an endemic problem of the Russian gas industry, is a major source of global pollution. Creating bottlenecks in the rigid system of gas deliveries, the war and sanctions of 2022 have significantly increased the flaring. Since it is difficult to shut down gas wells or preserve the gas, the only way to get rid of the excess is to burn it off into the air. In August 2022, just one Russian compressor station near the Finnish border was burning ten million dollars' worth of Siberian gas every day.[15] Natural gas is a relatively clean source of energy. However, any savings on the emissions that the buying countries gained when they turned from coal to the Russian gas have been offset by flaring on the gas fields and by methane leaks from the enormous pipelines that go from Western Siberia to Western Europe.

Manifestations of Russia's pollution are many, and they stuck in the mind of anyone who had visited the country: smog, heat waves, traffic jams, piles of garbage, dirty rivers, filthy harbors, undrinkable water even in the biggest cities, extinction of animals and fish even in the most distant forests and lakes. Agricultural regions of European Russia are mostly desolate, with their soil exhausted and people fleeing. Belts of intensive agriculture around Russian cities, which produce much of the country's fresh food from herbs to potatoes, use extraordinary amounts of cheap fertilizers. Siberia has been extensively logged and ravaged by fires. Even in its biggest agglomerations, Russia has not introduced even the most basic measures that almost any European country implemented years ago – waste sorting, home water meters, or residential standards of energy efficiency. Though the Russian elite prefers to live in individual cottages with modern gas boilers, fashionable fireplaces and artesian wells, standard housing projects in Russian cities still use Soviet-style, highly inefficient systems of central heating.

With two thirds of its territory having no access to the electric grid, the country needs alternative sources

The Pechora River, in Nenets Autonomous Region, Russia, is the only sizable European river that is still largely untouched by human influences. Virtually all European salmonid fish (12 species) can still be found in this river. The delta is an important breeding area and stopover site for migratory birds.
PHOTO: PETER PROKOSCH, GRIDA.NO

of energy. As a producer of hydropower, Russia ranks seventh in the world, competing with Japan and Norway. In nuclear energy, an important relic of paleomodernity, Russia is also a major player. But progress in the use of renewables such as solar and wind has been painfully slow. Even with their prices plummeting, renewable energy is still more costly than burning domestic gas or coal. Although the government was awash with money and could buy any number of solar panels or wind turbines, it chose not to. In 2010, at a business conference in Berlin, Putin mocked the very idea of an energy transition. "I do not understand what fuel you will use for heating. You do not want gas, you are not developing the nuclear power industry, so you will make heat from firewood?" Putin asked the audience. "You will have to go to Siberia to buy the firewood there."[16] Ten years later, solar and wind together made up less than 0.5% of Russia's energy production, compared to 42% in Germany and 10% in China. Per capita, Russia produced six watts of wind energy a year, compared to 1,000 in Denmark and 200 in China.[17]

Cars are an element of paleomodernity that have survived into the new era. A new revolution in the auto industry started together with the revolution that buried the Soviet Union. In 1992, the Euro 1 directive stipulated the maximum emissions for all cars sold in Europe. Russia adopted this standard in 1997; until recently, it was not possible to register a car in Russia that was inferior to the Euro 5 standard. Safety belts belong to paleomodernity, emission standards to gaiamodernity, but they should work together in every car. Better, cheaper cars complying to the standards were assembled in Russia from ready-made foreign parts. The old Soviet car factories were shut and repurposed. In response to the invasion of Ukraine, the major car corporations left Russia. Having appropriated their assembly lines, native businesses could not make cars that met the EU standards. The solution was simple: in April 2022, the government issued a decree that abolished the European requirements for Russian-made cars. Free to pollute, they were no longer fitted with airbags.

Given the scale and visibility of Russia's environmental problems, the relative weakness of ecological protests and green movements in Russia is puzzling.[18] There were vocal cases of environmental protest such as the Green Movement in Voronezh, which started as early as 1992 because of the particularly toxic mines there; the vigorous action against deforestation in certain regions of Moscow, which were led by Evgeniia Chirikova in 2012–2013; and various waste collection initiatives that gained publicity. However, they were all single-issue movements that did not raise larger political questions. In the massive political protests of 2012, the ecological agenda was almost invisible. The biggest protest Russia saw in the last decade was sparked by a plan to ship millions of tons of residential waste from Moscow to the pine forests of the Archangelsk region. Even compared to China, the green protests in Russia look timid.[19] Like other signs of the endemic weakness of Russian civil society, its ecological apathy results from the domination

of oil and gas profits in the national economy. As long as the 1% of the population that works in the fossil fuel industry secures half of the state budget, it is difficult to expect that commoners would rebel: the powers of the oil-fed, global-acting state and those of the impoverished, isolated society are incomparable.

Carbon and Inequality

The collapse of the USSR and the decline of Russia's economy reduced emissions within its territory without any effort on the part of its rulers. In 2013, the Kremlin set a national target to reduce emissions to 75% of the 1990 rate; while this sounded ambitious, in fact Russia's emissions were already less than 70% of that rate.[20] Ironically, Russia's rulers survived the deindustrialization of their country only by the increasing the volume of its carbon exports. Since the exported oil, gas and coal were burned in other countries, the resulting emissions were somebody else's problem. As Russian emissions would be seen as low per its space while global emissions continued to rise, Europe, China and the rest of the world would have to pay emission transfers to Russia. But few wanted to pay twice for their fuel, and Russia was never included in the emission-trading schemes. Real decarbonization has never been on the Kremlin agenda.

> Energy trade boosts inequality, and all petrostates are highly unequal.

Discussing the Russian economy, American academics Clifford Gaddy and Barry Ickes compared the petrostate to an inverted funnel.[21] Energy and capital enter it through the narrow neck; as the funnel widens, industries use them to manufacture arms, pipes, tractors or railways; the workers in these sectors receive wages that they spend on services and consumer goods that form the widest part of the funnel. On the top of the state's profits from energy exports, taxes from this funnel finance the security services: energy streams have to be defended, conflicts resolved, property protected. The leftovers go into "the social sphere" – schools, hospitals, pensions. Inefficiency, corruption, and tax evasion divert a portion of these revenue streams into a subsidy for the elite.

Due to oil and gas, a positive trade balance has been characteristic of the post-Soviet period. Every year, the country has exported an average of 10% more than it has imported, and over eighteen years that gives more than 200% of cumulative growth. But, strangely, domestic assets – state-owned and private – have hardly grown. The reason is the flight of capital.[22] The offshore wealth of Russian officials, oligarchs and their entourage is estimated at 1–2 trillion dollars. Placed abroad, this wealth equals all the financial assets kept within Russia's borders. According to the total estimate given by Thomas Piketty, one per cent of Russians control a quarter of the national income. This means that inequality in Russia is the same as in the USA, higher than in France and almost double that in China. Russia has more billionaires relative to the size of its economy than any other large country. Starting from the low Soviet position, post-Soviet Russia witnessed the fastest rise in inequality that has ever been seen worldwide.

In 2015, Sergey Donskoy, minister of natural resources, estimated potential Russian losses from climate change at 1–2% of GDP per year.[23] However, the proportion of Russian GDP made up by the oil, gas and coal trades was much higher, at 15–25% a year. Unlike the rest of its GDP, which was the result of the hard work of Russian citizens and partially returned to them in salaries and pensions, the carbon revenue directly enriched the government. A real decarbonization program adopted by the European and global economies would eliminate these profits – a major source of inequality.

Carbon and inequality are connected in multiple directions. Within any country or in the world as a whole, levels of the social pyramid represent differences in energy consumption. Bigger homes and cars; longer distances and higher speeds of travel; luxury from yachts to ski resorts – all this correlates with energy use. Oil and gas extraction is less labor-intensive than any other sector such as agriculture, coal or metal mining, manufacturing or services. Energy trade boosts inequality, and all petrostates are highly unequal.[24] Having stabilized and subsidized neoliberal states throughout the world, oil has been excluded from their privatization policies: selling other businesses, petrostates have not touched, or even renationalized, the oil sector. In the 2000s a new wave of nationalization swept through Venezuela, Bolivia, Ecuador, and Russia, bringing oil-extracting companies under state control. Boosting the financialization of the market, the instability of oil prices increased inequality of all sorts – between countries, classes, genders, and co-

horts. On top of that, Russia maintained a flat income tax and refused to introduce an inheritance tax. Both policies distinguished Russia from other developed countries. Almost no other modern country, not even the United States under Republican administrations, went as far as Russia in adopting these libertarian policies.[25]

The most common measure of inequality is the Gini coefficient. As calculated by the Russian government in 2018, nation-wide Gini was 0.411 – a high number that made the Russian Federation comparable in income inequality to the United States. But the official statistics underrepresented top earners and underestimated inequality.[26] Using taxation data, Piketty calculated the Russian Gini at 0.545, placing Russia among the world's most unequal nations.[27] His data did not include untaxed incomes – offshore accounts, grey trade schemes and kickbacks. In inequality of wealth (rather than income), Russia tops the world. According to Credit Suisse, in Russia in 2021, 58% of national wealth belonged to the top 1 percent, well above Brazil (49%), the US (35%) and the UK (21%).[28] Before 2022, two-thirds of Russian millionaires resided in Moscow, which was an incredibly high concentration of wealth for one city – the figure for London was about one-third.[29] Regional inequalities within the Russian Federation were far higher than anywhere else in the world. The richest US state paid 4.5 times more taxes per capita than the poorest, and the richest German *federal state* 2.5 times more. In Russia, the taxes per capita paid by the oil-extracting Khanty-Mansi region exceeded those of the overpopulated Ingushetia, in the Caucasus, by a factor of 300.[30] In a big country, this concentration of wealth was shocking. Russia's population exceeded Qatar's by a factor of fifty, but the number of people who gained from oil and gas revenues in Russia was probably smaller than the total population of Qatar.

The newest calculations of inequality of emissions rather than income of wealth (though they all correlate) again place Russia among the world leaders, right after the US. However, these studies count emissions where the fuel is burned rather than where it originates.[31] If the latter were taken in the account, the Russia-generated emissions would roughly double, and their inequality would increase as well.

For Russia, the immediate results of the Russian war in Ukraine will repeat the gloomy lessons of the Soviet collapse: reduction of international trade, a fall in GDP, depopulation and deindustrialization, and a possible dismemberment of the country. All this could again reduce gas emissions on the current territory of Russia, which will be very far from genuine, sustainable decarbonization.[32] For Ukraine, the war brings enormous damage on different levels – human, economic and ecological. About one third of the country's protected areas – three million acres – have been hit or burned by military activities.[33] Consisting mostly of toxic lead, modern ammunitions cause irreversible damage to fields, woods, and rivers. If there is a hope that the unexplored mines or bombs will be discharged or removed in the future, the dispersed lead and chemicals from bullets, shells and warheads will stay in the soil forever. Even if nuclear explosions of any kind are avoided, carbon emissions from military engines, urban fires and disturbed subsoil will cause much damage to the global atmosphere. On the top of this, Ukraine reportedly has 35% of Europe's biodiversity, and the war has reduced it significantly.[34] Moreover, reconstruction of Ukrainian infrastructure will produce even more technical emissions than were released during its destruction.[35] War should not have been allowed in the era of the climate crisis.

Consisting mostly of toxic lead, modern ammunitions cause irreversible damage to fields, woods, and rivers.

Indigenous Rights, Natural Resources and the Central Power

Due to the whims of nature and history, all Russian oil and are pumped from distant regions that have been traditionally populated not by the Russians but by other ethnicities – the Tatars, the Bashkirs, the Chechens, the Khanty, the Mansi, the Nenets, the Yakuts, the Evenks, the Ainu, and others. These natural resources are located in administrative districts of the Russian Federation that have some symbolic autonomy, recognized borders, formal democracy, and administrative institutions. To be sure, legal autonomy of these constituent members of the Russian has been much lower than autonomy of the fifteen Soviet republics, the constituent members of the Soviet Union. In addition, the most recent version of the Constitution of the Russian Federation has much reduced the rights of these ethnic "republics".

During the 1990s, the Russian constitution still ac-

Usinsk is the center for the production of oil and gas in the Komi Republic. Three quarters of all the oil produced in the republic comes from the fields in the territory around Usinsk. In 1994, Russia's largest oil spill occurred in the Usinsk region when an estimated 100,000 tons flowed from an aging pipeline.
PHOTO: PETER PROKOSCH, GRIDA.NO

knowledged the indigenous rights of ethnic minorities. The Russian Federation accepted responsibility for the "defense of age-old environments of habitation and traditional ways of life" (Article 72). However, constitutions of almost all nations proclaim that local mineral treasures belong to the people. This formula was present in the Soviet constitutions, but it never appeared in the constitution of the Russian Federation. American political philosopher Leif Wenar argues that respecting the rights of indigenous peoples is the only way out of the oil curse: if hydrocarbons are to be mined and burned at all, the profits should go to the locals, and especially to those who have been discriminated against in previous periods.[36] However, in the 2010s, oil and gas drillers reduced or destroyed even the national parks that had been created for the indigenous peoples in the 1990s. Federal legislation passed in December 2013 removed the protected status of lands on which indigenous people hunt, fish, and herd.[37]

In 2017, Russian oil workers beat up Sergei Kechimov, a Khanty herder and shaman who tried to defend the holy Lake Numto from their invasion. Citing four oil spills that threatened local fish and birds, Kechimov tried to sue the powerful oil and gas company Surgutneftegaz, but was unsuccessful. In 2019, Alexander Gabyshev, a Yakut shaman, set out for Moscow on foot, "to drive President Vladimir Putin out of the Kremlin"; he was arrested on the way and subjected to forced psychiatric treatment, a form of torture.[38] Even before the war, Marjorie Balzer, an American anthropologist who spent years in Yakutia, Buryatia and Tuva, believed in the potential of their emancipatory movements.[39] Intense discontent had been growing in the major cities of Siberia.[40] Booming industrial centers, they experienced a sharp decline when the military orders dried up, as had happened after the Cold War and as will happen again after the Russo-Ukrainian War. In September 2022, mass anti-government protests occurred in Dagestan, directed against the "partial mobilization", and against the war.

Various nations in the Russian territory have been impatient with Putin's state. In 2019 in Izhevsk, the capital of the Udmurt Republic, Albert Razin set himself alight in protest at the suppression of his native Udmurt language. A banner found next to his body read "If my language disappears tomorrow, I am ready to die today" – a quote from the Dagestan poet Rasul Gamzatov.[41] Earlier, in 2013, Ivan Moseev, a leader of the Pomory (Seasiders), was arrested for "inciting hatred against Russians" and collaborating with the Norwegian intelligence services. Almost nine years later, the European Court in Strasbourg ruled against Russia, declaring Moseev the victim of an illegal verdict. The Pomory – an ethnic minority in the Russian North with a distinct identity and culture – spoke a dialect of the Russian language and had never experienced serfdom. Led by the Pomory, massive protests shook Shiyes, a village in the Arkhangelsk region, in 2018–20. This barely populated area had already been crisscrossed by eight gas and oil pipelines. Moscow

planned to construct a monstrous landfill there, destroying the woods that the locals used for hunting and berry-picking. It would have been Europe's largest garbage dump, with waste delivered from Moscow, located 1,200 kilometers away.[42] The mass protests, in which locals blocked the railway line with tents, lasted two years. The project was cancelled in 2020. It was the biggest victory of the Green movement in contemporary Russia.

Stopmodermism

Economists believe that any success in coping with the oil curse depends on the quality of national institutions such as governments, courts, and media. In the countries with "bad institutions" – in Russia, Iran, Venezuela, Nigeria, Libya – we see the vicious circle of resource dependency. Extracting raw materials and using their rents, these countries devalue their human capital. Undermining their institutions, they depend still more on their resources. Going from one crisis to another, such societies pollute the natural and the human environment. The result is demodernization – the loss of previously attained levels of education and equality, a creeping paralysis of society, and arbitrary activity by the state. With its uncertain property rights, political authoritarianism and record levels of inequality, Russia is the model of "bad institutions". If the combination of resource dependency with good (or just acceptable) institutions is called the Dutch disease, let's agree to call resource dependency in combination with bad institutions the Russian disease.

> The result is demodernization – the loss of previously attained levels of education and equality.

Russia's demodernization was an intentional activity, a mode of structuration that was freely chosen by the Russian elite and imposed upon the broader population, and subsequently upon the global arena.[43] The Russian state confronts modernity by drilling for oil and gas, creating massive pollution, subsidizing far-right movements around the world, and destroying its neighbors. These policies are not inertial, ad hoc responses to the changing situations. On the contrary, they realize an active, even proactive, determination that is trying to adjust, with visible difficulties, to the changing reality. Russia has some allies in this venture, but the project of reversing modernity is its own "special operation". Strategic stopmodernism is the chosen, consistent self-healing for the Russian disease.

Demonstrating an unexpected focus and creativity, the Kremlin has used various strategies, from climate denialism to electoral interference to war, to resist and reverse gaiamodernity. There was no secret, long-term plan that coordinated these efforts in advance. Anthony Giddens's theory of structuration provides a better perspective: agency creates structures that modify the opportunities for a new action, and this action changes the underlying structures that open or close the new opportunities.[44] Instead of a master plan for future change, the ruling group had preferences that defined its choices at every step: *a taste rather than a plan*.

While anything like a *plan* of stopping gaiamodernity would be vocally rejected by Russia's trade partners, they ambivalently shared the Kremlin taste. Year after year, fossil fuels funded half of Russia's federal budget. These trillions of euros were voluntarily provided by the countries of the developed world, in full compliance with neoliberal norms and modern contract law. The lion's share of this funding came from Europe, which in 2021 bought three-quarters of Russia's gas exports and two-thirds of its oil exports. The money was crucial for the stability of Russia's currency, for its military spending, for maintaining the luxurious lifestyle of its elite, and for importing consumer goods for the general population. Russian exports provided about 40% of the EU's gas, about half of its coal and a quarter of its oil. The relationship was symbiotic, though the numbers show that Russia depended on it more than Europe. The EU's planned energy transition would mean a replacement of products extracted from nature with goods created by labor. This would result in a major reduction of Russian profits.

Despite all the talk of modernization and diversification, there was no Europe-wide plan for substituting the fossil imports from Russia by any other source of energy. Neither did Russia have an alternative source of revenue. While this export-import situation before the all-out war of 2022 felt stable or even stagnant, from the Russian perspective it was deteriorating. If there were hopes of cheating the planet through the EU Trading Emissions Scheme (2009), there would be no way around the EU Transborder Carbon Tax (2021).

Planned for implementation in 2026, the Carbon Tax would impact the cost of all high-carbon products,

including steel, cement, aluminum and petrochemicals. Non-EU producers of these commodities would pay €75 per metric ton of emissions occurring during the production of them. The effect on Russian exports would be equivalent to an additional customs charge of 16%.[45] In April 2021, the EU declared its commitment to reducing emissions by half by 2030 and to zero by 2050. This would mean proportional reductions of oil and coal purchases. Gas, a cleaner fuel, would keep flowing for another decade. "You see what is happening in Europe. There is hysteria and confusion in the markets," said Putin in October 2021.[46] By this point, Russian war efforts were in full swing. The Russian invasion of Ukraine led to various plans of oil embargo, price caps, and import substitution. At the time of writing, the implementation of these plans has been partial at best.

A particularly Russian combination of abundant natural resources and a shared traumatic experience led to a sense of omnipotence: the whole world was whirling around Russia. As long as European countries kept buying Siberian fuel, Putin's public lived in a utopian space. A great irony of history was that this quasi-socialist dream had been implemented by deeply conservative, far-right leaders. If the worst comes to the worst, an authoritarian turn might seem a sensible way to confront the climate crisis.[47] But there is no excuse for imperialism, which is nothing but a barbaric method of destroying the planet. As Anthony Giddens wrote, "the history of oil is the history of imperialism, in one guise or another."[48] Russia needed no guises. A combination of unearned income from fossil fuels and unearned protection by nuclear weapons produced an untested, overconfident, and incompetent elite. Peace hid the failures of these people behind inflated growth figures, rigged ballot boxes, and collective indifference. The war revealed their arrogance and impotence. ●

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Indigenous People Living with Waste and Pollution in the Arctic

by **Vladislava Vladimirova**

This essay discusses how Indigenous people in the Arctic live with waste and pollution. I explore three significant aspects of waste that help reveal the overwhelming impact that it has on Indigenous individuals and communities. These are waste's materiality – its physical presence in the environment and homeland of many Indigenous groups. Second, I show how waste's invisibility in some cases creates indeterminacy which transforms and controls individuals' and communities' lives. Third, I reflect on waste's temporalities that intersect with the first two aspects to escalate their impacts and exacerbate inequality. I reveal how these aspects of waste and pollution determine the lives of many Indigenous communities in the Russian and European Arctic.

I roughly identify two modes of co-existence with waste: living with waste through everyday practices of accommodation, learning, and resistance; and more radical opposition through civic activism. Those modes are not dichotomous and can overlap or evolve into each other.

The essay is based on secondary data and on empirical material collected through ethnography, such as participant observation and semi-structured interviews in several communities in the Russian North: Sami and Komi in Murmansk Region, Komi and Nenets in Komi Republic and Nenets Autonomous Region, Evenki in Krasnoyarskii Krai, and Nivkhi on Sakhalin Island. The data has been collected through multiple field research trips from 2001 until the present.

Waste and Pollution in the Arctic

Different conceptualizations of the Arctic (Arcticism, following Said's Orientalism) have coexisted historically and perpetuate themselves today, and predetermine popular perceptions and expectations. Some of the most stable representations are those of icy hell and wilderness, a frontier devoid of human civilization; or on the contrary, of a paradise rich in species and Indigenous cultures.[1] Such ideas have also influenced the exploitation or protection of Arctic areas. Based on the former perception, modernity triggered a parallel idea of the Arctic as a territory of rich resources, to be tamed and mastered through scientific exploration, human technological genius, toil, and heroism.[2] Throughout the 20th century, Arctic areas have been actively explored by scientists and governmental agents and "mastered" – used for extrac-

tion of renewable resources and minerals, transportation, competition and claims of sovereignty and geopolitical domination. Exploitation of the Arctic frontiers has a long history that is associated with the establishment and administration of states and their colonization of land and people in consolidating power both nationally and internationally. The earliest forms of exploitation were centered on valuable animal species,[3] while later, with the advance of scientific knowledge, technology, and transportation, exploitation left more a visible footprint.[4] Geological exploration, mining and drilling, processing ores and chemical substances, military industry and weapon testing, nuclear power, and urbanization, have transformed Arctic landscapes beyond repair.

In contrast to the expectations of scientists, ecologists, and ideologues of scientific and economic progress of early 20th century, humanity has not managed to advance nature exploitation to a level where pollution and waste are insignificant.[5] When traveling in the Arctic, one is stunned by the contrast between breathtaking natural vistas, landscapes, wild flora and fauna, and picturesque villages and farms, and severely disturbed forest and tundra land, pits and landfills, polluted water, litter, and areas fenced off for unauthorized visitors. Arctic pollution is a major concern both for scientists and environmental activists who advocate nature preservation, and for critical social theorists who analyze it in relation to colonialism and contemporary neoliberal governance. Accumulated waste and pollution in the Arctic are not only a legacy or heritage of colonialism, but continue to produce exclusion, inequality, and inferior Indigenous subjects. On the one hand, governments and companies create and deposit waste and pollution from the reproduction of capitalism into areas they consider peripheral, subjecting their population to cohabitation with waste and its negative impacts. On the other hand, the majority population blames peripheral and Indigenous communities for being "backward" for not conforming to or welcoming green technology, like for example wind energy, even when the price is sacrificing their traditional economy and culture, like reindeer herding.

Just as there are contrasting conceptual representations of the Arctic, scientists are inconsistent when assessing the level of pollution in the Arctic zone. While UNEP (United Nations Environmental Program), states that the Arctic is a relatively clean environment in comparison with other parts of the world,[6] many scientists and activists are raising the alarm, claiming that the Arctic presents some of the most polluted areas in the world.[7] Climate change, instead of serving as a warning to delimit industrialization, is seen by many as a chance to access, extract, and export more resources in the Arctic due to melting permafrost and sea ice. Climatic, natural, geological, social, political, and historical factors lead to specific forms, length of life and unpredictable impacts of

Left: Indiga Reindeer Herding Cooperative winter camp in 2013, Nenets Autonomous Region. CLUE Research Project.
PHOTO: HUGH BEACH

Right: Reindeer Herding Cooperative "Tundra" winter camp at Belaia Golovka. Kola Peninsula 2007.
PHOTO: VLADISLAVA VLADIMIROVA

pollution and waste in the Arctic. The Arctic contains 5% of the world's oil, and most oil production takes place in Northern Russia and Alaska. Petroleum products are not only extracted, but also used, stored, and transported in Arctic areas, and fuel spills that occur in the Russian part of the Arctic and in cold regions are recognized as the most extensive and damaging pollution to ecosystems and human health.[8] Due to the cold climate, natural attenuation is slow and petroleum concentration remains high for long time. Seasonal thaws then cause continuous dispersion every summer, and bulk extraction is not possible due to the high cost.[9] On the other hand, the climate also contributes to infrastructure wearing out more quickly, and thus frequent oil spills, especially in Russia. Shoreline spills from tankers or resupply vessels are the second largest source of oil pollution.[10]

> Climate change, instead of serving as a warning to delimit industrialization, is seen by many as a chance to access, extract, and export more resources in the Arctic due to melting permafrost and sea ice.

The Arctic is also a stage for intensive military activity, production, storage and weapons testing thanks to its strategic location to Europe, America, and Asia, and its conceptualization as a frontier and a wilderness. Huge military infrastructures are hidden in the Arctic from "enemies' eyes"; training over large territories and challenging terrains, testing of technologies of mass destruction and extermination are also taking place.[11] Due to its severe climate, the high cost of infrastructure and transport maintenance, and the perception of Indigenous people as under-developed, governments imagine that it is easier to conceal in the Arctic the huge destruction that the natural environment and local communities are subjected to due to armament and militarization of the world. The location of a high number of nuclear sources in the Arctic, including the nuclear ice-breaker fleet of Russia, together with global fallout from atmospheric nuclear tests, liquid discharges from nuclear plants, and accidents, cause radioactive contamination.[12] The waste and pollution caused by militarization often intersect with industrial pollution, displacement of Indigenous communities, inequality, and nowadays climate change.

In addition to locally produced pollution, highly concentrated chemicals, heavy metals, and other hazardous substances travel to and are deposited in the Arctic as a result of extensive long-range transport through air

and ocean currents.[13] Arctic haze in the winter is one phenomenon that has been discussed by scientists since at least the 1970s. It consists of a mixture of gases and particles (aerosols), some of which are of chemical composition, such as sulfate, graphic carbon, lead, cadmium, sulfur and other compounds from pesticides and fungicides.[14] Sulfur threatens low level ozone, disrupts atmospheric energy flows, and contributes to acid rain. Copper, lead, zinc and arsenic accumulate in lichens and mosses.[15] Their accumulation in Arctic ecosystems, trophic chains, and from there in human and animal bodies are among the highest measured anywhere in the world. Those pollutants cause health risks that particularly affect Indigenous populations, who are most dependent on locally grown food supplies, both wild and domestic.[16]

In the 1980s scholars started observing that PCBs (Polychlorinated biphenyls, toxic compounds produced and used since the 1930s), travelling through long range atmospheric transport, are being accumulated in Arctic regions. PCBs dissolve in fats and oils and adsorb to sediment particles and have thus bioaccumulated in food webs and are consumed by humans, who are in addition exposed to them through drinking water and inhalation of contaminated air. Scientists relate PCBs to a number of skin, blood, immune and reproductive diseases, even though when exposure is low causal relations are hard to prove.[17]

The Arctic climate and physical characteristics also predetermine the seasonality of pollutants' dispersal and interaction with ecosystems: in the summer months compounds defrost and disperse, causing serious risks to ecosystems, animals and human population. The shortage of available water and limited soil development also influence the way contaminants behave. Many polar species are slow growing and long living, which permits the accumulation of larger amounts of contaminants than in other parts of the world.[18]

Plastic pollution is also pervasive in the Arctic, even in areas with no human activities. Only a small share of it is from local sources, like fisheries, landfills, wastewater, and offshore industrial activity. The dominant part of plastic pollution such as plastic debris and microplastics are carried from lower latitudes by ocean currents, the atmosphere and rivers. As climate change intensifies, plastic emissions produce an increased microplastic burden on Arctic ecosystems and humans.[19]

International Cooperation

National states address Arctic pollution in domestic legislation, while international mechanisms vary in their goals and impact. The AEPS (Arctic Environmental Protection Strategy), established in 1991, strives to protect Arctic ecosystems and humans (specifically mentioning Indigenous people and cultures) through sustainable utilization of natural resources, regular monitoring of the environment and identifying and reducing pollution. Under this initiative, AMAP (Arctic Monitoring and Assessment Program) was launched to implement pollution control and assessment of its impact on ecosystem and human health. Since 1998, the Arctic Council (AC) has been actively involved with ACAP (Arctic Council Action Plan to eliminate pollution of the Arctic). IASC, the International Arctic Science Committee, aims at helping coordinate research related to the Arctic, and nowadays often strives to include Indigenous peoples' representatives at its work and events.

> At the non-governmental level, environmental activists in the past have often acted in disregard of the interests of Indigenous people living in the Arctic.

At the nongovernmental level, environmental activists in the past have often acted in disregard of the interests of Indigenous people living in the Arctic.[20] Therefore, alliances between environmental organizations and Indigenous organizations and communities are a recent phenomenon, as is Indigenous organizations' environmental agenda. Indigenous groups started lobbying against hazardous substances within their states in the 1980s and pushing towards more scientific research on their impact on human health. Indigenous groups have been involved in AMAP and have actively looked for their recognition through influencing the work of the AC and IASC.[21]

The Materiality of Waste in the Arctic – the Home of Indigenous People

Only in the last decade has scholarship on waste and pollution paid serious attention to materiality: "as much as societies have sought to [...] hide their wastes for fear of contamination, so academia has been shy of the *stuff* of waste," engaging instead with topics such as waste management, disposal, technology, and politics.[22] Gregson and

PHOTO: KIRILL SHAKHOVCOV

A deserted all-terrain vehicle in the vicinity of the village of Kuiumba, Krasnoyarskii Krai, 2010. CLUE Project.

PHOTO: VLADISLAVA VLADIMIROVA

The definition of waste is culturally specific. In this case, the rusty oil barrel represents a sacred cite near a snow-scooter path in the tundra, on which travelers leave gifts to insure that they reach their destination. Nenets Autonomous Region 2013, CLUE project.

Crang critically explore the politics of this avoidance to remind us that 1) the category of waste has situational and relational character and is not only expressive of social values, but also sustains them; throughout history, waste and dirt have been used to create and maintain social borders; categories and social orders use materials but are not determined by them; 2) observing that studies on the USA in the 20th century show a predominant location of waste sites and industrial discharge in proximity to areas with high numbers of people of color, they locate debates about waste within the framework of environmental justice, where they point to its hazardous nature and persistence of its material properties; 3) pointing to waste's materiality shows that it is part of a sociotechnical complex, not an asocial matter or a social convention. Waste is a process that is both material and social, politically influenced and part of the governance and creation of society and maintenance of particular power relations and inequality.[23] The literature on post-war environments has taken a lead in theorizing the materiality of war-related pollution, such as organic materials, chemical pollution and landmines.[24] Eleana Kim, for example, writing about unexploded mines in battlefield landscapes, shows how military waste persists and alters ecosystems, including human individuals and communities.[25]

Military pollution in the Arctic is considerable and the Kola Peninsula is an emblematic example of a heavily militarized area. It was the stage for famous WW2 battles, which left many traces in both the geographical and social terrains, in the form of plane remains emerging from thawing tundra pits in spring, to glorifying narratives of Indigenous Sami reindeer battalions, and war hero memorials. In Soviet times, some of the most important ports and bases for servicing nuclear submarines were located in the Kola Peninsula, in Gremikha, Zapadnaya Litza, Poliarny and Vydyayevo. Air force bases and ports Olenya and Pechenga, and military and nuclear rocket bases at Ostrovnoi and Severomorsk, were constructed in the late 1950s and early 1960s, and after a period of decay in the 1990s and early 2000s, are being rebuilt and resupplied since 2018. Militarization of the area as an important post against the West during the Cold War and in the present serves as a justification for the displacement of many Indigenous Sami communities and radical transformation of the terrain. Narratives and memories of displacement and fencing off large territories from unauthorized humans are an important part of Indigenous Sami history and identity, as well as contemporary cultural practices such as reindeer herding. Fencing and cutting off land in order to conceal military infrastructure and the pollution that it creates are common material practices that are part of political domination in the European part of the Russian Arctic.

The materiality of waste and pollution is overwhelming near industrial sites, where waste and destruction are laid bare, and land can never be re-cultivated. Examples are too numerous, but to continue with Murmansk region, the notorious copper smelting facilities in Nickel

PHOTO: VLADISLAVA VLADIMIROVA

Old boats deserted at the sea port of the town of Poronaisk, Sakhalin Island 2009. CLUE Project.

PHOTO: VLADISLAVA VLAVLADIMIROVA

Repeated use of all-terrain vehicles damages the fragile tundra cover beyond repair. An all-terrain vehicle is stuck in a tundra pit, Kola Peninsula, 2007.

and Zapoljarny have received much international attention as they are located near the border where they also spread pollution in Norway.[26] Despite decreasing toxic emissions of sulfur dioxide during the last 30 years, on some occasions concentrations exceed the threshold value, while on the other hand, concentrations of nickel, copper and carbon monoxide have considerably increased since 2004. In the 1980s, lakes in a radius of 20 km from the smelter both in Russia and Norway suffered acidification with serious effects on fish. In soil samples, heavy metal concentrations are high at a distance of 30–40 km from the smelters. This leads to accumulation of metals in moss, plants and shrubs. Berries and birds in the area also show higher levels of metals such as copper, nickel, cadmium and manganese. These create both health risks for the local population, and anxiety.[27]

The oil and gas industries are dominant in Siberia. Old, deserted structures from oil extraction are so common that they have become part of the landscape and an orientation feature for travelers and reindeer herders. Working structures are experienced in ways that are even more immediate, for example through vibration and noise, or hindrances for domestic reindeer or other animal species' migrations. The way they transform ecosystems and the terrain is a constant topic for discussion and concern among local communities. Besides the pollution that they create, from a local perspective they can be characterized as a "waste", as a feature that is foreign and unneeded in the environment that it has invaded, that it distorts its "natural" order.[28] At the same time, the oil industry in Russia has encountered little opposition from Indigenous people. Due to their economic and political power, oil companies are preferably conceived of as patrons, despite the destructive effect on the environment and contradictory attitude to Indigenous economies such as reindeer herding and fishing. On the one hand, oil companies readily negotiate with reindeer herding enterprises and pay for using their grazing land; on the other hand, land, water and reindeer are disturbed in the long durée. This predicament, as Florian Stammler writes, negatively influences the mental wellbeing of Indigenous communities and individuals.[29] Elisa Lopes addresses a similar controversy when describing how reindeer herders in the north of Sweden feel morally split when they need to work in the Kiruna mine in order to maintain their herds and reasonable economic comfort, and thus participate in the destruction it causes to the natural environment, the basis for reindeer husbandry.[30]

Oil spills are a frightening materialization of the risks and destruction to which contemporary energy consumption subjects the planet. Oil spills are rarely shown in the media nowadays – which does not mean that they are rare. In Russia, official reporting of oil spills is poor, but information leaks from non-governmental organizations and social media which, even though difficult to verify, indicate numbers of annual spills in the thousands and the quantity of spilled substances in millions of tons, due to old and low-quality transport infrastructure.[31] Lower but still alarming numbers (several hundreds per year) are provided by the NGOs Bellona in Norway and Green Peace Russia.[32] A recent spill (May 2020) that attracted more attention in global and Russian media due to its enormous scale occurred in the Norilsk region as a result of equipment failure. A subsidiary of the mining company Norilsk Nickel (Nornickel) let 21,000 tons of diesel fuel seep into the ground and water on Taymyr Peninsula. Norilsk Nickel did not give information

about the accident until several days later and chances for containment and a quick clean up were missed, despite the company's claim that the fuel was contained. Different reasons and scales for the spill were discussed in the media and no clear evidence of its ecological impact was published.[33] A year after the spill, Green Peace Russia reported that for the first time in Russian history, Russia has mandated that the company pay compensation for the damage, including to Indigenous people. The impact on Indigenous people has been evaluated by the Expert Center Project for Arctic development in Russia, established in 2017 to coordinate knowledge creation and distribution about the Arctic under the auspices of the Ministry for Development of the Russian Arctic and far East (itself functioning since 2019). Judging by its webpage, the organization's main agenda is creating and distributing information about the Arctic in harmony with the purposes and interests of the state elites. The Expert Center's chair is an expert in mass communication, its general director a specialist in machines for the chemical industry, and its executive director is an expert in law with career history in the Ministry of Interior Affairs and in criminal investigation. Huge number of the staff are people with media and information and PR education. I was not able to find out who exactly conducted the evaluation of the Norilsk oil spill damage; online sources state that experts from leading academic and research organizations calculated that by deteriorating conditions for fishing, hunting, gathering and pollution of the environment, Norilsk Nickel caused damage to indigenous people of 174 million rubles. This money is to be given to Indigenous communities, and in addition the director of the company announced the creation of a complex plan for restoring the ecosystems in the affected areas, developing Indigenous traditional land use, and creating new jobs in tourism, reindeer herding, fishing, hunting, and continuous industrialization.[34]

Mine waste is common in the north, both in Russia and in Fennoscandia. It takes the material form of waste rock, tailings, and dust that often resist being managed in a controlled way. With the reopening of the Sydvaranger mine in northern Norway in 2009, for example, the waste-rock piles accumulated from its previous operations (since the early 20th century) were discussed as constituting threats (of spills), blocking access to land for local people, cabin owners, and skiers, and violating reindeer herders' and Indigenous rights.[35] Mine waste is an ambiguous matter – a gray zone between waste, heritage and perceived current and future economic use.[36] This heritage, however, might have diverse historical and emotional values for different local groups and may for example be a reminder for Sami of the appropriation of reindeer herding land and their exclusion from areas and sectors of the economy, as Elisa López also shows about the Kiruna mine in Sweden.[37] In Kiruna, Sami were not allowed to work on the construction of infrastructure until the late 19th century and were not allowed spend the night in the city well into the 1930s.[38]

> The Kuzbass open coal mines in Kemerovo Region of Russia are a notorious case of pollution, landscape destruction, and traumatic impact on Indigenous people.

The Kuzbass open coal mines in Kemerovo Region of Russia are a notorious case of pollution, landscape destruction, and traumatic impact on Indigenous people. Like Kiruna, Kuzbass has a long history of forceful displacement of Indigenous villages (since the 1970s) and severe transformation of the terrain. Since the 1990s, the Shor people have been granted a more tangible role to negotiate with mining companies and the right to a share of the mining rents which entered the municipal budget.[39] Political empowerment and increased material wellbeing gained by accepting living with waste is common among Indigenous communities, and is prompted by lack of alternatives, coloniality and marginalization in the Arctic. As this case shows, however, it is rarely long-lasting. In 2012, relations with the mining company Iuzhnaia escalated into an previously unseen conflict when a small group of people from the Shor village Kazas refused to sell their houses and plots of land to the company whose pits were constantly expanding and swallowing this and further settlements. Shortly afterwards, those houses were burned by an alleged wild fire – at which point the case was reported by Shor activists to the UN's commission on Human Rights.[40] Shor people expressed severe loss of their homes, lands, and the spirits of their ancestors, whose remains needed to be rescued from the village territory and reburied in a new place.[41] In contrast to the short term empowerment and enrichment, the trauma caused by mining is long-term and transmitted to future generations. The material presence of mining

Deserted forestry industry infrastructure near the village of Kuiumba, Krasnoyarskii Krai, 2010. CLUE Project. PHOTO: KIRILL SHAKHOVCOV

waste and scars in the landscape also reminds Indigenous residents of such historical trauma, of exclusion, displacement, powerlessness and loss.

In Sweden, the project of the British company Beowulf and their subsidiary Jokkmokk Iron Mines AB to build an open pit iron-ore mine in Gállok faced opposition before and after they acquired a license in 2010. After the notorious forceful removal of protesters from the terrain in 2013, Sami and environmental activists continued the struggle, engaging different forms, including art and information campaigns in social media.[42] Despite the heated debates, and the regional administrations' rejection of the project, the Swedish government took a decision in support of the mine in March 2022, disregarding the Sami Parliament assessment that the mine and its infrastructure will further cut off territory from reindeer herding that has already been severely restricted by forestry, hydropower, power lines, quarries, and the cumulative impact of climate change.[43] According to the company's expert evaluation, the impact of the planned mining operation on reindeer husbandry would be minor, despite discussed plans for the construction of a new railway to transport the ore, or new roads through grazing territories that will be heavily trafficked.[44] According to UN experts, the mine will generate vast amounts of pollution and toxic waste that will endanger ecosystems, including the World Heritage Site of Laponia.[45] The heated conflict and lack of detailed coverage and open debate in the central media introduced huge amount of stress among local and Indigenous communities and negatively affected their wellbeing. As a recent study shows, the Gállok mine contestation, in addition to the remaining 31 concession permits and 269 exploration licenses for the Norrbotten county and 69 concessions and 273 exploration licenses for the Västerbotten county, all in reindeer grazing areas, point to a national politics that prioritizes short term interests from mining at the expense of the long-term interests of local communities, such as reindeer husbandry. This has further escalated Sami communities' distrust in equality, in their power of representation, and in their future as reindeer herders, and ultimately as a culturally distinctive group.[46] In addition to destroying the landscape and creating pollution, each new mine is a materialization of such fears and insecurity for Sami people. The present conflict over the planned graphite mine in Vittangi, Kiruna municipality, by the Australian company Talga is yet another impending materialization of unequal distribution, representation of interests and social groups, and power over the land. Against local peoples' concerns about water pollution and Sami fears of further disturbance of reindeer herding, Swedish authorities raise the arguments that all humanity needs graphite for the transition to green economy, as it is an important component for electric car batteries.[47] Similar attempts to disqualify Indigenous and

PHOTO: VLADISLAVA VLADIMIROVA

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PHOTO: KIRILL SHAKHOVTCOV

Top left: Dried salmon, is a staple winter food for Indigenous Nivkhi People of Sakhalin Island. Toxins that fish accumulates can in the long term create health risks for Indigenous communities. CLUE Project. Above: Seals are only allowed for Indigenous Nivkhi hunters to catch in limited numbers. Sakhalin Island, 2009. CLUE Project. Right: Deserted log houses in the village of Kuiumba, Evenki Region, Krasnoyarskii Krai. CLUE Project, 2010.

local people's concerns and suffering, confronting them with a generalized idea of the common good, have been discussed in a critical analysis of mining in Russia[48] and of the contradictions surrounding green wind energy in the North.[49] However, both the costs and benefits of such resources extracted from Indigenous people's ancestral territories are unequally distributed. While mining permanently undermines the basis of Indigenous economy, its benefits go in a disproportionate manner to elites, like in the case of graphite for batteries, where even in rich countries like Sweden, electric cars remain primarily accessible to members of the economic elite.

Landfills and garbage disposal in the Arctic pose specific challenges. But the project of transporting garbage by train from Moscow (3 million tons per year) and St. Petersburg (2 million tons per year) to be dispose of and stored in the Arctic (at Shies station, on the border between Komi and Archangelsk regions), raised huge opposition and protests in the local Komi population. The project was at first kept secret and residents only learned about it after nearby villagers saw the material transformation of the terrain in preparation for the landfill in July 2018, when over 5,000 hectares of forest were clear-cut. The project caused fear, mixed with fury, and was met with what is perhaps the largest civil protest in the Russian North. What was perceived as "waste" land by capital-located investors and entrepreneurs EkoTechnoPark Shies running this business project– a deserted train station amidst pit lands, 25 km away from the nearest small village and 98 km from the regional capital Syktyvkar – was the water collection zone of the region. After filing complaints to the governor of the region supported by the expert evaluation of scientists and ecologists of the threats that the project would cause, environmental organizations, scholars, and the local population went out on mass scale protests, building a camp at the site and rallying in villages and cities. About 25,000 people took part and in 2019 political support to the project investors was withdrawn and they were ordered to take away their newly built infrastructure and re-cultivate the land.[50]

Indigenous People Living with Invisible Waste and Pollution

Invisibility is another aspect of waste that, despite the attraction of such a dichotomy, is not opposite or contradictory to waste's materiality. Invisibility of waste is complementary to or contributory to its material dimensions. This idea builds on a processual understanding of waste, where invisibility is a manifestation of intentions of hiding, or the qualities of particular waste and pollution, for example of nuclear pollution. The invisibility of waste can multiply its material effects, for example on ecosystems or human health, and is thus of great significance for the evaluation of the impact of waste in the Arctic.[51]

Deserted port infrastructure in the town of Poronaisk, Sakhalin Island, 2009. CLUE Project. PHOTO: VLADISLAVA VLADIMIROVA

The most dramatic, and unfortunately all too common, example is nuclear pollution in the Arctic which has tremendous impact on Indigenous communities and culture. In Sweden and Norway, nuclear pollution revealed itself in the months after the Chernobyl accident, when nuclear fallout affected pastures important for reindeer and other farming animals and food pollution in the North was significant. In the late summer and autumn of 1986, average radio-cesium concentrations in reindeer meat in some areas approached levels 100 times higher than that officially permissible.[52] Indigenous people were thus not only deprived of a staple food with cultural meaning but also of their main source of income.[53]

The invisibility of radioactive pollution in meat created huge insecurity as herders were not able even to measure the pollution but had to send samples to far-off laboratories, i.e. they lost their role as experts on the status of their reindeer. Scholars contributed to the indeterminacy as no single credible account of the risks caused by the consumption of meat with different cesium concentrations could be provided; experts' statements ranged from "nothing to fear" to predictions of hundreds of cancer deaths.[54] In an attempt to ameliorate the problem, Norwegian and Swedish authorities raised considerably the level of "safe" or permissible amount of radioactivity in meat in the months after the accident.[55] Governments justified this measure as an attempt to protect the Indigenous economy, culture and lifestyle;[56] however, it could have posed risks to the health of individuals and communities. According to an anthropological study conducted after the increase, it further aggravated the Sami's indeterminacy and lack of faith in the authorities and in scientists.[57] Years after the Chernobyl accident, its consequences on Sami communities continue to be relevant and extensively studied.[58]

Despite the high number of nuclear facilities and its long history as a nuclear power country, plus the largest number of Indigenous groups, Russian publications on the impact of nuclear pollution and waste on Indigenous people is less numerous. Major sources of radioactive contamination, in addition to the Chernobyl accident, are nuclear weapons testing, the operation, storage, and dismantling of nuclear submarines and handling fuel for them, radioactive waste disposal, and nuclear power stations.[59] The biggest nuclear power stations in the Arctic are Kola in Murmansk Region and Bilibinskaia on the Chukotka Peninsula (with 4 blocks). Due to technological defects, the latter station regularly leaks water polluted with strontium-90 and cesium-137. The water that is defrosted under the station contains radioactivity as high as the pollution created for a whole year during hydrogen bomb testing in the 1950s.[60] Due to outdated equipment, a series of smaller accidents allowed further

radioactive pollution from the station in the 1990s. Even if the monitoring of Chukotka does not report higher radiation levels, testing of plants in some regions show two times higher values than the norm, and bone material of Indigenous residents show 5–6 times higher levels than the average for other regions in Russia.[61] Another source of radioactivity might be the storage (over 20 km²) from a uranium processing unit closed in 1957, which exceeds the average concentration of radon hundreds of times.[62]

Much nuclear pollution and utilities are related to the military, and a predominant part of them are located on the Kola Peninsula, as described earlier. Territories around the bases can be heavily polluted and constitute a danger for human health. Huge amounts of radioactive material have accumulated in the Barents Sea, due to inefficient storage of nuclear submarine fuel, leakages, accidents (in 1982, 700 tons of water containing highly radioactive elements were released into the sea at Andreevo Bay). The accumulated pollution from all storages may reach the level of pollution caused by the Chernobyl accident.[63] Other areas in Siberia have been polluted by releasing waste from the nuclear and chemical industries directly into the rivers Ob and Yenisei in the period 1950–1990s. Such pollutants have now accumulated in the Kara Sea and are posing acute threats.[64]

> Strontium in bone tissue of reindeer herders can show values 60 times higher than in non-indigenous people from the same areas.

Temporalities of Waste

The critical lens of justice casts light not only on the unequal distribution of waste among social groups and spaces. Intergenerational justice perspectives reveal how existing social injustices in waste disposal and impacts are replicated in time. A processual understanding of waste also requires engagement with time – the persistent materiality of waste and pollution described above and the material dimensions revealing themselves out of invisible pollution imply temporal framework and scale. A focus on temporality assists us to pay attention to the noxious intergenerational effects of waste, whose legacies can be conceived as a form of "slow violence," as I argue below.[65]

Testing reindeer meat in Sweden after the Chernobyl accident suddenly revealed that in some cases, frozen meat from preceding years showed radiation levels much higher than the standard of 300 Bq/kg determined by the authorities as safe in 1986. Norwegian experts related this unknown pollution to multiple atomic bomb tests conducted by Russia near Novaya Zemlya Island in the 1950–1960s, both in the air and in the water. In addition, Russian scholars are now reported to have conducted tests on Indigenous residents that subsist on reindeer meat in the Murmansk and Archangelsk regions, in Komi Republic, Taymyr and Chukotka, in the 1980s, and found that the content of cesium was five times higher than in other populations in Russia after the Chernobyl accident. Strontium in bone tissue of reindeer herders can show values 60 times higher than in non-indigenous people from the same areas. Despite the lack of scientific publications, local communities and medical staff discuss the higher number of lung and liver cancers among Indigenous people in Russia.[66]

A lesser known part of Soviet history comprises the underground nuclear blasts in the period between 1965 and 1988 (their precise number is not known but in the range of 124–169), officially reported as industrial, but whose real purpose has been a subject of debate among scholars.[67] In villages of the Kola Peninsula, this history is still present today in local peoples' fear of radioactive pollution in drinking water, and extreme care in collecting drinking water only from particular sources instead of from the tap.

Nuclear pollution is further transmitted decades later through species such as lichen, that absorb extremely high levels of different radioactive substances, for example cesium-134 and -137. Lichen is the main winter fodder for reindeer. Mushrooms, another favorite autumn fodder for reindeer, are also prone to accumulate high levels of radioactivity which they transmit further along the food chain to animals and humans. Different life cycles and their temporal dimensions contribute to recirculation of nuclear (and other forms of) pollution in the Arctic, where it is a recurrent threat to Indigenous and local individuals and communities. Berries and mushrooms are important nutritionally and culturally for many people in the North and regularly collected.[68] Nuclear pollution poses a risk to humans; due to their long temporal cycles these risks can be hard to evaluate or connect to specific symptoms and diseases.[69]

Other kinds of waste and pollution that might have

delayed impacts on Indigenous populations in the Arctic are plastics and PCBs. The connection between plastic pollution and human health is poorly understood, but scholars report that microplastics have been discovered in the lungs, intestines and placentas of local inhabitants.[70] Studies of coastal Indigenous communities in Chukotka in 2001 and 2010 also show that food from the sea is contaminated with polychlorinated biphenyl and other toxic substances (AMAP, 2004). The results in the local Indigenous population that can be connected to such PCB pollution are increased perinatal mortality, miscarriages, congenital malformation, and stillbirths, as well as immunosuppression and carcinogenic diseases. Contamination intersects with other unfavorable factors and social problems that further exacerbate the threats to human health.[71] As my field research in other notoriously polluted areas of the Russian Arctic like Murmansk Region, Krasnoyarskii Krai, and Sakhalin Island shows, Indigenous individuals experience anxiety due to a long history of toxic waste and pollution exposures, hidden from them by the authorities. Such politics of time prevents the Indigenous population from taking precautions to preserve their health and life. This perpetuates a sense of the low value attributed to human life and more specifically to Indigenous life in Russia. Anxieties and mistrust accumulated since the past are projected into the future. Indigenous people in Russia, like the Sami in relation to mining and wind energy in Fennoscandia, are continuously facing state and business actors devaluing the intrinsic value of their livelihoods, reindeer economy, cultures, and homeland. In addition, they are being directly or indirectly morally condemned for hindering economic development for the common good and the green transition. These contribute to the continuing forced alienation from land and culture. Toxic exposure of Indigenous bodies and anticipated diseases and malformations lead to alienation even from own bodies.[72] These processes are also projected into the future, as contaminated environments and sick bodies pose a risk and fear of transmittance to coming generations.

Conclusions

Governments justify prioritizing economic development and growth at the expense of the environment and minorities' interests with care for the majority residents' prosperity, well-being, and equality. Costly and polluting military development is attributed to the nation's need for sovereignty, security, patriotism, and protection of the nation's freedom and values. The price that (different) groups of residents contribute to such developments is rarely specified and if mentioned at all, it goes under an abstract idea of the "social contract".[73] In informal conversations, both in Russia and in Sweden, Indigenous rights can be questioned: all groups living in an area or a country are equally disregarded within the abstract "social contract". And a mine, a factory, and a landfill produce fumes and chemicals that do not discriminate by ethnicity in their effect on nearby populations. The protagonists of the social contract, however, who tend to belong to privileged ethnic, social, and economic groups, often leave unnoticed prior and "epistemological" inequalities that attribute less value to certain groups and individuals and shape societal attitudes in invisible ways to produce long-term visible effects. Those who represent society in "social contract situations" represent some groups' interests over others. For example, Norilsk Nickel company posted in several media sources in February 2023 about acquiring a license for a large-scale lithium mine amidst reindeer pastures near Kolmozero Lake, in Lovozero Municipality. Several pictures illustrated how the company was conducting the prior consultation and informed agreement with Indigenous communities and reindeer herding enterprises that is obligatory according to the latest federal legislation. The Expert Centre Project for Arctic Development chaired the meetings and promised to organize ethnological expertise of the societal impact of the project on Indigenous communities. The post was discussed in Facebook the following day and a few Lovozero Sami noticed that 1) only one Sami person can be seen on the pictures, and 2) the meeting took place months after the license had been given to the company in the autumn of 2022, despite the law's promise of prior consultation.

Indigenous communities have very limited agency to avoid or control waste, but are forced to live with it. On some occasions, they can use this enforced cohabitation to negotiate their rights to compensation, and on others, mobilization to resist waste can increase self-determination and Indigenous empowerment. Structural inequalities, global pollution flows, environmental injustices, the invisibility and multiple temporalities of waste mark Indigenous life in Arctic areas, some of which are the most polluted on the planet. Radical critical theorists speak of toxic contamination as a slow violence because it is not immediate and is difficult to recognize in contrast to other "spectacular" forms of physical violence and displacement.[74] Waste and pollution are described as coemerging with processes of dispossession, alienation,

displacement, and marginalization of Indigenous people in the history of their colonization. Continuous pollution and life with waste are reproducing and extending the historical injustices of colonialism and are thus a form of ongoing slow violence.[75] ●

Note: Photos with the CLUE abbreviation have been taken under the program "Dynamics of Circumpolar Land Use and Ethnicity (CLUE): Social impacts of policy and climate change" 2009–2013, funded by the American National Science Foundation, award number 213665.

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Making of an Art Project: Ringing Trace

by **Pavel Otdelnov**

My art combines traditional creative practices — art, photography, installation, and video — with a journalistic approach.

I address the subjects of ecology and the environmental legacy of the Soviet past in a number of my works. The project *Psychozoic Era*[1] focuses on sludge collectors and waste ponds of industrial enterprises across Russia; *Sand*[2] explores land reclamation and environmental damage to the rivers Kazanka and Volga; *Shitty Sea*[3] tracks the journey of municipal waste from household bins to landfill sites or incinerators. The larger part of another project, *Promzona*,[4] is dedicated to environmental problems related to the chemical industries in the town of Dzerzhinsk.

This article covers the environmental subjects in my new project, *Ringing Trace*, which was created in 2021 as part of the residency programme of the 6th Ural Industrial Biennale of Contemporary Art. *Ringing Trace* delves into the history of the South Urals nuclear industry and the environmental disasters caused by radioactive contamination of the Techa river and the explosion at a radioactive waste storage facility on September 29, 1957.

The Soviet Atomic Project had its starting point in the Southern Urals. This was where the Soviet Union built its first reactor to produce weapons-grade plutonium, and where its first nuclear bomb was developed. These facilities were top secret and any information about environmental incidents there was closely guarded. It was only in 1989 that any information about the incident in 1957 was officially made public for the first time.[5] My preliminary research for the exhibition relied on declassified documents and academic publications from the 1990s and 2000s.[6]

The research efforts were guided by a set of fundamental criteria:

- Reliable and verifiable sources.
- Stories that are part of the history of the global Atomic Project of the 20th century.
- Focus on the human dimension of the tragedy.
- Availability of accessible visual metaphors to narrate the events. (This one turned out particularly challenging as radiation is invisible to the eye, and photos or video footage covering the events are classified or simply do not exist.)
- The exhibition took place at the former dormitory used by the scientists on the project. I wanted to integrate its walls and its history into my narrative.
- Not to offer answers but to make the audience ask questions and seek answers on their own.

Junub, 2021. Fragment of the exhibition.

Mural, 2021. Installation.

The Techa River, TECHA

In the late 1940s–early 1950s, it was paramount to achieve nuclear parity with the US at any cost, so radiological protection was not the primary concern. From 1949 to 1952, Mayak Production Association dumped radioactive waste into the Techa River. As a result, pollution of the river network Techa–Iset–Tobol–Irtysh–Ob totalled 2.75 million curie of gamma radiation.

28,000 people were exposed to high doses of radiation from 3.5 to 170 rem. The higher-grade exposures occurred in Metlino Village, situated closest to Mayak, with a population of 1,200 people.[7]

Dozens of thousands of people lived along the Techa River. Since the activities were top secret, people were not aware of the hazards they were exposing their families to when using the river water for cooking or farming. Moreover, radionuclides got entrained in food chains and contributed to the development of cancers.

> Twenty-two villages and towns were relocated from the Techa floodplain.

The catastrophe of the Techa River is addressed in one of the rooms at the exhibition. There I placed the grass varieties that populate the banks of the poisoned river and installed a replica of the Soviet concrete sign that warns of radiological hazard.

Twenty-two villages and towns were relocated from the Techa floodplain (around 7,500 people) between 1953 and 1961. At the same time, one of the more densely populated villages, Muslyumovo, remained in place, whereas some villages downstream, i.e., further removed from the incident, were evacuated.[8] Muslyumovo was relocated only in 2009. However, the new Muslyumovo was built merely two kilometres away from the dangerous river.

Mural is a photographic copy of a Soviet mural found in an abandoned kindergarten in Muslyumovo. The serene landscape with birches and a blue river conceals a dangerous hazard.

As of 1991, out of 4,040 current residents of Muslyumovo, 285 had officially documented cases of radiation sickness. 50% of the population had various anemias, 51% had respiratory pathologies, 47% had gastrointestinal tract diseases, 22% had bilious illnesses. Common symptoms were described, typical in most residents of the area: chronic fatigue, bone and muscle ache, nose bleeding, gum bleeding, dyspeptic ailments, localized skin numbness. Dubbed "the river sickness" by the locals, this set of radiation-induced diseases was independently studied by doctors and geneticists and called the Muslyumovo Syndrome.[9]

Gynecologic cancer in the area is more prevalent among observant Muslim women, especially of older ages, than among other women in the area. Local healthcare professionals confirm this, positing that the cause may be in the repeated obligatory practice of washing the

Junub, 2021. Fragment of the exhibition.

private parts. Even if out only for a few hours, for example to go to the forest, a Muslim woman carries around a dedicated water jug. Whereas in a healthy environment, this hygienic mandate has been a most effective prevention technique, in the floodplain of the Techa River its dead water has caused many diseases, including cancers.[10]

The situation of the small numbers of indigenous peoples is shown in the exhibition room called *Junub* (Arabic for "impurity"). One of the walls bears the hadith "Cleanliness is Half of Faith" and an instruction guide for the partial ablution. The wall opposite has a painting depicting the ruins of a pig farm. It tells the story of two neighboring villages, Russkaya Karabolka and Tatarskaya Karabolka, both hit by radioactive contamination from the explosion on September 29, 1957. The local Church of the Life-Giving Trinity in Russkaya Karabolka was destroyed following the evacuation. Tatarskaya Karabolka has not been relocated to this day. The bricks from the church were used by the Muslim population of Tatarskaya Karabolka to build a pigpen. This is a very telling case of the Soviet government's attitude to the locals and their traditions. According to anecdotal accounts from the residents of Tatarskaya Karabolka, the animals at the newly built farm died en masse during the first few years.

The Eastern Ural Radioactive Trace (EURT)

On September 29, 1957, a Sunday, at 16 hours 22 minutes, a storage tank holding high-level waste exploded at the Mendeleev State Chemical Plant (renamed the Mayak Production Association in 1966). The explosion completely destroyed the welded stainless-steel cylindrical tank that contained 70–80 tons of liquid radwaste. The tank itself was mounted in an isolated underground containment that had concrete walls of approximately 1 meter in thickness. The topside concrete slab on the containment (160 tons) was blown away by the explosion and propelled 25 meters to the side. The explosion ejected the acetate high-level production waste all around. The exploded tank released 20 million curies in the form of 90Sr, 137Cs, 144Ce, 95Zr, 95Nb, and 106Ru. A radioactive cloud of radioactive dust and liquid droplets coated numerous industrial facilities. The immediate impact zone covered reactor manufacturing plants, the construction site of a radiochemical plant, the isotope production plant, the fire depot, military housing, and the prison camp.

The Eastern Ural Radioactive Trace (EURT) mostly affected smaller settlements. The area contaminated with 90Sr to upwards of 1 curie per square kilometer included 87 villages with a total population of approximately 21,000 people. All the cattle and poultry, foodstuffs, forage, and water sources in the EURT-affected settlements were contaminated with radioactive materials. The residents were exposed to radiation.[11]

It was important for me to create a simple and recognizable sign, a visual metaphor for this catastrophe. I made an old, layered wall into a sort of a geographical map with the names of towns in the Sverdlovsk, Chelyabinsk, and Tyumen regions that were impacted by the radioactive cloud. Using a gas burner, I charred the map with an outline of the area where the radioactive waste

EURT, 2021. Installation.

The Relocated, 2021. Installation.

settled. I found a 1950s clock in the building and set it to 16:22 — the exact time of the explosion.

The villages of Berdyanish, Satlykovo, Galikayevo, and Kirpichiki were evacuated on days 7–10; 6 villages were evaluated on day 250 after the incident, 8 villages on day 330, and 6 more on day 670. The village of Tatarskaya Karabolka was never evacuated.[12]

Other found objects were photos taken in these villages in the mid-1950s. I painted canvases from these photos to depict the evacuation. The faces in the portraits are blurred and the clothing and hairstyles unmistakably point to the 1950s. A picture of someone's peaceful life, snapshots of families and children, are shown alongside the crossed-out names of the villages that no longer exist The explosion disrupted innumerable lives and livelihoods, and almost no memory of them has remained.

My exhibition featured found texts as well as installations and other art. Next to the installation *The Relocated* I placed a found account of the evacuation from Iran K. Khaerzamanov:

"When the cloud came, my daughter of 10 months old was on the vegetable patch with her grandmother who was harvesting potatoes. The little one got red diarrhea and died in a few days. My little darling is still buried at the cemetery of Berdyanish Village. I am quite composed telling you all this now, but back then, the grief—it's better not to speak of it. There were a great many such cases with kids. Grownup bodies happened to be more resilient.

And then, preparations began for the relocation. First, the village's west side was relocated to the east side. There were hopes that a complete relocation could be avoided.

All dogs were shot dead. Cats were eradicated. Dosage metering was done on people's clothes; if the radiation was too high, the clothes were taken away and incinerated. Then they began disposing of cattle and poultry. Animals were shot in front of everybody's eyes. They didn't die immediately, still moving or slugging around the blood pit. Their heads were half-blown off, they were making hoarse sounds and gushing blood. The people crowding around could be hit by a ricochet. Women and children were crying. During the war and post-war years, the attitudes to sustenance were very particular. These animals were considered family. So you can imagine the dismal state we were in, going home later, after such savagery, to a village overcome with dead silence.

I had this nightmare again, recently, with a firing squad shooting my cow in a blood pit near my home village of Berdyanish, and with me there pulling on the cow's tail, trying to get her away from this hell. Out of breath and screaming:

— Don't shoot, she's innocent!"[13]

Iran's relatives visited the exhibition and shared video interviews where they give an account of the same event in horrifying detail.

The explosion affected trees as well as people and animals.

In the summer of 1958, in an area 12.5 km removed from the source of the cloud, the complete death of all pines due to radioactive irradiation was registered; further away dead pines were less common, primarily found in open spaces (forest clearings, sparse forest areas). Birch woods proved much more resilient against radiation. Complete death of all birches occurred only in the zones of highest contamination. Lower exposure levels in birches resulted in wilted canopy tops and underdeveloped foliage. Effects after four years included delayed leaf expansion and blossoming, and early defoliation. The radioactive trace was easily recognizable by patches of barren birches with no leaves.[14]

> The complete death of all pines due to radioactive irradiation was registered.

The final room of the exhibition has a painting showing the interior of a biomaterial bank, which stores specimens sampled from people directly or indirectly linked to the nuclear industry. This work was conceived as a memorial to all those who paid for the Atomic Project with their health and lives. And to all those who continue to pay this price.

The specimen bank is located in the closed town of Ozersk, and there was no way to visit it. I submitted numerous letters asking to receive a photograph of the interior. My inquiries were never responded to. In the end, I had to make a composite image of the bank.

Ringing Trace was created as part of the residency programme of the 6th Ural Biennale of Contemporary Art. It opened on September 11, 2021, in Sokol Village, Snezhinsk District. Once secret, in the 1940s the location hosted early Soviet research for the Atomic Project. The village remained closed for free access until 2008. When opened, visitors were limited to Russian citizens only. The exhibition attracted a lot of attention, with attendance of over ten thousand people. Most importantly, it appealed to the locals who came in from near-by

Repository, 2021.
oil on canvas
150x200.

closed nuclear towns. Some would return with friends and family. The exhibition became a venue for meetings of local historians and liquidators of the 1957 incident. The audience included eyewitnesses of the events described and former workers of the secret plants and laboratories. This was, perhaps, the greatest stroke of luck: the project served as a catalyst for meetings and discussions about the lessons of the past and our responsibility.

Thanks to the advocacy of a local activist, a resident of one of the villages, the exhibition became permanent. Yet in December 2022, entry into the village was once again restricted — a new guarded access control point was set up.[15] There is no certainty at this time as to the future regulation of access to this area and the future of the exhibition itself. ●

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Narrating an Oilfield in Transition

by **Sara Persson**

The story of the Patos-Marinza Oilfield in southern Albania is contradictory and contested, like all good stories. The history of modern Albania is contained in the chronicle of this oilfield as it carries with it the hopes and dreams of industrial development during the Communist era, as well as the despair and environmental degradation during the breakdown of communism and the civil war following the national pyramid scheme in 1997. In recent decades, Patos-Marinza has been revitalized and modernized, attracting foreign investors, new technology, skills development and experiencing record high production. The development of the oilfield has also been accompanied by environmental restoration through the introduction of state-of-the-art technology and the clean-up of the pollution of soil and water resources.[1]

However, Patos-Marinza has also been associated with several scandals and controversies, such as widespread poverty, excessive gas emissions, earth tremors and community protests. In the same way that the nationwide optimistic expectations on the transition to democracy and market economy have been replaced by gloomy reality and the consequential exodus of young ambitious Albanians, the development of Patos-Marinza has left many residents both disappointed and in a state of despair. Thus, when I examine the current narratives about the Patos-Marinza Oilfield, various layers of Albanian history call for my attention. As a former oil industry consultant and employee, I spent almost five years working at the Patos-Marinza Oilfield and have several first-hand experiences of its controversies. In recent years, I have revisited the Patos-Marinza Oilfield in the role of researcher.[2] This text uses various sources to illustrate the milestones in the development of the Patos-Marinza Oilfield, as well as the various discourses that describe its modernization and expansion.

> The history of modern Albania is contained in the chronicle of this oilfield.

National Outlook – Natural Resources and Private Investments

Albania is a country rich in natural resources such as minerals, water, oil and gas. As Albania was in a state of widespread poverty after the collapse of the Hoxha regime, a swift move toward a market economy, including increased exploitation of its natural resources, was highlighted as being crucial to economic progress. However, due to poor administration and a lack of updated legislation and supervisory authorities, the opening up of the country also led to severe environmental degradation. This resulted in hundreds of acres of deforestation,

Rusty Albpetrol oil deposits surrounded by polluted soil.
PHOTO: SIDONIE HADOUX

the unregulated commissioning of processing plants, quarries and dams throughout the country, as well as increased pollution of the soil, air and water.[3]

The past decade has seen increased focus on environmental issues in Albania among citizens, media, civil society, as well as at government level. The government has ratified most international environmental conventions and protocols, its environmental legislation has been reviewed in order to align it with the European Union, and new state environmental agencies have been established. In addition, various reforms to attract private investment have been carried out to promote the development of its natural resources. While this approach has led to many new investments and has generated tax revenues, it has also created conflicts between the concessionaires and communities living close to the extraction sites. This has resulted in court appeals, public protests, and new forms of environmental activism, as well as the increased involvement of civil society organizations.[4]

Natural resource extraction in Albania is therefore connected to two contrasting narratives. On the one hand, it is motivated by economic progress and the country's move toward EU integration. On the other hand, it is connected to new challenges of environmental pollution and conflicts with local residents and civil society. The issue of oil extraction in the Patos-Marinza Oilfield is a clear example of these contrasting narratives.

The Missionaries of Management Come to Patos-Marinza

I will start by telling you about Patos-Marinza through the narrative of the "missionaries of management", a metaphor developed by Monika Kostera[5] to illustrate the unidirectional communication between Western industrialized capitalist countries and the countries of Eastern and Central Europe, depicted as being in need of a similar form of development. In this metaphor, business administration takes the shape of a religion, and economic enterprises become religious institutions spreading their managerial doctrine through managers and consultants as committed missionaries. Since missionaries need a "pagan" counterpart to enlighten, this narrative is based on the picture of the "underdeveloped" past of Eastern Europe, and the cruel realities of closed Communist regimes. In addition, *sustainability* is a term that is fundamental to the legitimacy of the missionaries of management today. While they previously aimed to spread development, democracy and market economy in Eastern Europe, sustainability is now their main goal.

In Patos-Marinza, the missionary narrative has mainly been enforced by international investors and managers, the "priests and prophets" of the religion of management, whose engagement in Patos-Marinza is publicly described as being motivated by their contribution to progress, development and the remediation of environmental pollution. A clear example of this narrative can be found in a statement by the previous CEO of the Canadian company Bankers Petroleum Ltd. (Bankers), a company that took over management of the oilfield in 2004 and operated it under Canadian management until 2016. In a public interview following an oil and gas investor conference, Bankers' CEO stated: "Essentially, we are bringing the West to the East. If you think about it, we are bringing Western technology, Western know-how, Western business practices, into an emerging market in Albania. So, I think they see us as a real opportunity to develop the country and develop this asset, very much the way we developed in Western Canada".[6] The unidirectional movement of communication, technology and knowledge is obvious in this statement; the West is brought to the East, it is placed as a template over layers of Albanian history, and the material and discursive realities of Patos-Marinza are expected to mold into its form as a way of replicating the success of oilfields on Canadian soil.

The film *Patos-Marinza Oilfield – Awakening the Sleeping Giant*[7] is another expression of how the missionaries of management in Patos-Marinza legitimized their operations through the wrongdoings of the "pagan" Communist era. The film was created and financed by Bankers in 2014 to celebrate the company's 10-year anniversary in Albania. The film starts with a description of how the Albanian oil industry developed during the Communist era, the foreign excursions to Albania in the quest for oil reserves, the dependency on the Soviet Union and then on China for skills and technological development. Retired oil workers describe with pride how they struggled in the old oil fields, how the new wells were brought under control and the challenging decisions that had to be made in the harsh environment. The voiceover explains that as the oil industry expanded during the rule of Enver Hoxha, it was held up as a symbol of national pride in the closed nation but was also built under conditions that were extremely hazardous to both oil workers and the surrounding communities.

Through moving images accompanied by dramatic music, the film effectively demonstrates the total absence of health and safety equipment for workers at the time, and the horrifying environmental conditions due to the poor technology being used for oil extraction. For example, workers are seen attending to a burst wellhead in what seems to be casual clothing, with only a few of them wearing safety helmets. This is followed by images of oil contamination which has spread throughout the surrounding area, and which show the flora and fauna completely covered in oil residue.

Although the environment in Albania has been described as generally well preserved due to the lack of intense industrialization that was experienced in Western Europe, places like Patos-Marinza are designated as environmental "hot spots" due to the excessive environmental pollution. The collapse of the Hoxha regime and the transition toward democracy and a market economy initially exaggerated the level of environmental pollution of the oilfield. Rusting infrastructure of the state owned oil company Albpetrol was left unattended and oil residue leaked into canals and agricultural land. In 2000, an environmental assessment by UNEP reported that families in Patos-Marinza were exposed to severe health risks due to the oilfield's poor management. The report stated: "Severe soil and groundwater contamination comes from several sources. Oil wells are perforating the clay layer and very probably allowing hydrocarbons to contaminate the drinking water supply. The field's pumps are very poorly maintained and leak significant quantities of oil into the surrounding environment".[8] This provided a perfect setting for missionaries with a doctrine of sustainability to spread. Thus, the clean-up of soil and water resources became a key aspect of Bankers' mission in Patos-Marinza through investments

"Places like Patos-Marinza are designated as environmental 'hot spots'.

Agricultural field and Bankers Petroleum rig and oil deposits.
PHOTO: SIDONIE HADOUX

Well lease and storage yard of Bankers Petroleum.
PHOTO: SIDONIE HADOUX

Soil pollution caused by previous Albpetrol operations.
PHOTO: SIDONIE HADOUX

made by international development banks.

Thus, Bankers' investment and operations were further enhanced in 2009 when the international banks International Finance Corporation (IFC)[9] and European Bank of Reconstruction and Development (EBRD)[10] agreed to a major loan for Bankers' operations in Patos-Marinza. These investments were motivated by sustainability, with the vision that the polluted and degraded oilfield would be upgraded into a modern and "green" operation. As stated by IFC's Global Head for extractive industries: "While IFC provides financing to help improve recovery rates and accelerate domestic oil production, we also help the company to contribute to environmental remediation initiatives aimed at improving living conditions in the surrounding area".[11] This meant that the oil industry in Patos-Marinza could be developed and expanded, all under the flag of environmental remediation.

Converted "Pagans" and Emerging Elites

In order for missionaries to have a purpose, people need to be saved. Workers and communities have an important role to play in this narrative as the subjects in need of salvation. As Kostera writes, the project of transition in Eastern Europe does not only contain the idea of liberation of repressed peoples, but also the religious mission of transmitting the managerial religion of the capitalist West to the eastern "pagans". A group that often embraces the role of the passionate converted and believers are the skilled workers and middle managers in Patos-Marinza. These are what Kostera calls "emerging native elites" comprising people who are profiting from the missionary visions and practices. The narratives of environmental remediation and technology development in Patos-Marinza are strong within this group, which compares the current working situation with the hardships of the past.

In interviews I carried out with Banker's employees in 2017, the ideas of this group of "converted elites" were clearly on display. A Bankers' manager who worked in Patos-Marinza during the Communist era recalled the conditions when he first came to the field in the 1970s: "Every road was covered in oily mud, the wells and the surrounding areas were full of leaked oil, the workers were servicing the wells with no health and safety measures and in very bad working conditions".[12] He then highlighted the huge improvements to working conditions that are the consequence of foreign investment. Another Bankers' manager spoke of the spirit and sense of progress the investment of Bankers brought with it: "They gave a Western feel to the entire area, not only Patos-Marinza or the surrounding villages but the whole Fieri region. Like, you know, a Western company is working in Albania; this made Albania look like a normal country. For Albanians, it's a dream to be part of advanced societies".[13] Thus, the clear improvement in working conditions and the environmental situation, to which the older oil workers testify, is something that depicts Patos-Marinza as a powerful symbol of Albania's transition to modernity, democracy and environmental remediation – a symbol of hope associated with what foreign investors have brought to the country.

> The workers were servicing the wells with no health and safety measures.

In the "missionary narrative" of Patos-Marinza, the local communities are often portrayed as poor and unskilled, stripped of agency and cast out as victims of their surrounding environment, which makes them "open" to a missionary conquest. While some members of the community are described as "happily converted pagans" in this narrative, other members are portrayed as miserable and dissatisfied as they are unable to be part of the "new religion". One of the above-quoted Bankers' managers explained the dissatisfaction of local communities as follows: "Those people who work at Bankers but are residents [of the villages around Patos-Marinza] are very happy and hold the company management in high regard. But those people who don't work at Bankers want to be part of Bankers, meaning that they like Bankers. But when they're not offered work by the company, it's only natural that they start complaining".[14] By depicting the dissatisfied members of the community as "potential converts" who, nevertheless, are unable to abide by the standards of the "religious institution", the threat to the narrative of transition

Women in a village next to the oilfield showing cracks in their house walls. PHOTO: SIDONIE HADOUX

and modernity is kept at bay. It is not the religion of management that is at fault when complaints are made; it is "the pagans" who are still unable to understand its greatness.

Anniversaries and accomplishments are celebrated in any religion, usually through practices such as ceremonies and rituals. In 2014, Bankers celebrated 10 years of operations in Albania and an all-time high level of production with 20 000 barrels of oil per day. The above-mentioned movie was made to describe this success and new windbreakers were delivered to all employees with the *20 000 barrels of oil per day* record emblazoned on the front. The 10-year anniversary was also celebrated at a huge party in the ruins of the ancient city of Apollonia, a site of important cultural heritage, now open for night-time use by drunk Canadian and Albanian oil workers. The city of Apollonia was named after the Olympian deity Apollo and was founded in the 6th century BC by Greek colonists from Corfu and Corinth.[15] While Albania has seen many religions come and go on its territory since this time, the new religion of management made its presence in Apollonia known that night. As the "priests, prophets and elites" of the new century, they celebrated in style, with famous Albanian artists contributing to the atmosphere, good Italian wine filling the spirits of the crowd and huge lighting systems assembled in the ancient ruins to highlight a large decal featuring the topic that was on everyone's lips: *Bankers – celebrating 10 years of success*. Even though some damage to the magnificent ancient ruins was noted by small media outlets following the party,[16] the missionaries and new elites agreed that the party had been a worthy celebration of their accomplishments to date.

The Curse of Oil and Local Protests

Even though the missionaries of management described their progress in Patos-Marinza with pride, where increased oil extraction could coexist with environmental remediation and improved living conditions, not everyone agreed on this narrative of completion. Widespread poverty, extensive gas emissions, earth tremors and community protests disturbed the sense of completeness achieved by the Western management doctrine.

The poverty in and the complaints from the surrounding communities, which the missionaries regarded as a testimony of their inability to surrender to the blessings of corporate advancement, was viewed by other actors as an indication of the cracks in the narrative of progress and environmental remediation. In 2014, the same year as Bankers' 10th anniversary, Bankwatch Network, a network of environmental and human rights groups in Central and Eastern Europe, conducted a fact-finding mission in Patos-Marinza. The report from its visit stated that: "Pollution goes hand in hand with extractive industries, and the Patos-Marinza area has been exploited for decades, so the team was prepared for the unpleasant odor in the air, sludge pits, rusty scrap heaps, dusty

roads and heavy lorry traffic." The visiting team noted the ongoing environmental pollution in Patos-Marinza, not only connected to the legacy of past operations with sludge pits and rusty scrap, but also new air emissions and heavy traffic resulting from the present operations. The report also noted that: "Poverty of this scale in communities living in the shadows of extractive industries is not typical, at least not based on our observations over more than a decade and half across Eastern Europe"[17]. In this report, Bankers' activities were described in terms of their negative impact on local communities, as well as the lack of local economic development visible on top of the black gold. In this counter-narrative, Bankers' operations thus resemble a curse rather than a promise of salvation.

Since Bankers' takeover of the field included both technological and visual improvement, the powerful narrative of sustainability and a cleaner environment was enhanced. Bankers took over the old wells from the state-owned company Albpetrol, cleaned up their immediate surroundings, which usually comprised pools of oil, and recommissioned the wells using state-of-the-art technology. However, Bankers also drilled new wells in new parts of Patos-Marinza and oil production rapidly increased, which led to new impact on local communities, such as the persistent odor of gas. A previous Bankers' employee who I interviewed in 2018 explained: "Even though the Canadians had very good technology – it's actually the most advanced technology for heavy oil – it's still quite difficult to contain all the gases. So this is going to affect the people who live and work in the area for a long time".[18] In another interview in 2018, a woman living in Patos-Marinza spoke about gas emissions and health issues among local residents: "If you stay with me for one night you will see how heavy the gas is in the morning. Many people in the area get sick and have to take medicine because of the environmental contamination. People are poor and without work, so they cannot afford to buy medicine".[19]

While the gas emissions and potential impact on health have been constant concerns among Patos-Marinza residents, another concern are the earth tremors that regularly take place in the area. While Bankers has continued to maintain that these are "normal" earth tremors caused by the movement of tectonic plates, local residents believe that the tremors are caused by the technology being used in the oilfield.[20] In a video posted on YouTube by the TV channel, Vizion Plus Albania in September 2013, a group of young men with their faces and bodies covered in black liquid to resemble oil are seen marching outside Bankers' main office in Fier, holding a large sign proclaiming: "Bankers! Stop! Oil wealth, not disaster!". One man declares to journalists: "We have gathered in front of the company's office to break the silence that local citizens have maintained for several years and to start an era of resistance against the abuses of this company. For many years, the land in Fier has trembled and shaken due to Bankers' poor management of the oil".[21] The tremors have caused the residents in Patos-Marinza to rise up in protest on several occasions[22] and these events captured by the national and local media have occasionally received support from local politicians.

The final period of the Canadian "missionaries of management" in Patos-Marinza experienced a dramatic incident when a well exploded in the field in April 2015, causing significant damage to the adjacent village of Marinza, when carbon dioxide spread into the groundwater, creating huge fountains of water in domestic water wells and causing cracks to appear in houses and village infrastructure due to the water pressure.[23] Nobody was injured but it created huge economic loss and psychological distress to the residents as the very foundations of their homes were shaken. Many people also linked this incident to the ongoing issues with tremors in the field and therefore regarded it as evidence that Bankers' operations were indeed a threat to the local communities. Bankers paid out a large amount in compensation to people whose properties had been damaged by the incident. The compensation was greatly appreciated by recipients but it also resulted in further unrest and conflicts because those people who had been impacted by previous tremors had not

Local residents believe that the tremors are caused by the technology being used in the oilfield.

Spontaneous protests are the most common form of community mobilization.

received any compensation as Bankers had continued to maintain that these had been natural earth tremors.

The Return of Chinese Partnerships

After the celebratory year of 2014, when oil prices peaked and Bankers celebrated record levels of production, oil prices fell dramatically and disputes with the government over alleged understated profits and lost tax revenues intensified. In 2016, Bankers announced that the Chinese investment company, Geo-Jade Petroleum Corporation, had acquired "all issued and outstanding common shares"[24] of the company for nearly USD 500 million. This started a process of handover in which the loans to IFC and the EBRD were repaid, and Chinese senior management gradually took over operation of the company.

Before relationships turned cold at the beginning of the 1970s, Albania and China enjoyed close technical and economic cooperation, particularly in the development of the Albanian oil industry. In the mid-2010s, several Chinese investments in Albania indicated renewed interest in developing stronger economic ties between the countries. One of the most prominent Chinese investments was the investment in Bankers and Patos-Marinza, which now represents 95% of Albania's oil production.[25] However, the protests and conflicts with local communities did not end following the take-over by Chinese investors and managers. When I visited Patos-Marinza in 2017 and 2018, staff members and residents spoke about the same issues as before, including gas emissions, earth tremors, lack of work and poverty. There was also a sense of fear among employees and residents that the environmental and social issues would increase under the new Chinese management.

The Chinese management has taken a firm stance against the old Canadian management by suing the former CEO and some of his closest affiliates, accusing them of corruption and the disclosure of confidential information for personal gain.[26] However, many of the Canadian management's programs for environmental remediation and community relations have continued under Chinese management, with messages being broadcast about Bankers' investments in roads, hospitals[27] and drainage systems[28]. The missionaries now come from another part of the world, but their messages about sustainability, technology and development seem very familiar. Today, the future of Patos-Marinza is in the hands of the current government and the Chinese investors who, in recent years, have increased production to new record levels. While government and company reports are only positive, the burden of an expanding oilfield is still carried by those people who continue to live close to it.

Spontaneous protests are the most common form of community mobilization and resistance in the area but organized civil society in Patos-Marinza is weak and continues to struggle. One Bankers' employee who was interviewed in 2018 described a lack of funding as the main issue for independent civil society organizations and further community mobilization: "In Fier, civil society is very weak. Bankers is now working with an organization which had previously been the strongest voice in the communnity, but now we are paying them. And people in the area know about this and no longer trust this organization. If the people have genuine concerns about Bankers, who are they supposed to trust? Who will be their representative?"[29] This bleak picture of civil society and its relationship to industry is daunting and leaves little hope for a more inclusive governance of the resources of Patos-Marinza.

As the extraction of oil in Patos-Marinza is highly politicized, few independent voices are available to conduct objective assessments of the social and environmental situation. While there is no question that some of the previous contamination of soil and water pollution has been remedied and modern technology is now being used, there still remain unanswered questions about the local air quality in the area, as well as the cause of the earth tremors.

The Western crusade in Patos-Marinza has ended and its narrative has now been replaced by a Chinese version. Increased oil production in combination with environmental remediation and improvements have proven to be a successful narrative, which appears to con-

tinue. With no organized civil society in place to represent local people and scrutinize the negative social and environmental impact from expanding operations, this narrative continues to remain largely uncontested. Meanwhile, the litany by residents who are negatively impacted by the oil extraction continues in the shadows.

Note: The photos were taken by Sidonie Hadoux during 2014 as part of a separate photo project about Patos-Marinza. The people in the pictures are not related to the quotes in the text.

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Belarus

How the Chernobyl Failure Led to Change in Belarus' Nuclear Policy

by **Andrei Stsiapanau**

The Chernobyl nuclear power plant was back on the front pages of the media in March 2022 with Russia's invasion of Ukraine. Chernobyl station (hereafter ChNPP) was occupied by Russian troops. Military equipment and weaponry were placed on the site, and control over ChNPP and other nuclear objects passed into military authority. It was instantly transformed from a "peaceful" or civilian nuclear object into the military one, and from a decommissioned nuclear site with radioactive storage facilities into a nuclear threat during a military conflict. There are many examples in the nuclear enterprise of how civilian and military developments are entangled, and how in various political contexts they have been disconnected. The occupation of the ChNPP and the complete seizure of the Zaporizhzhia NPP by the Russians illustrates how easily civilian nuclear object can be used as a firing position and as a shelter during warfare. Even International Atomic Energy Agency (IAEA) intervention did not stop this exploitation of the civilian nuclear facilities by Russia for war purposes, and the threat of a nuclear accident remains very high.

Accidents at Nuclear Facilities

In *Normal Accidents*, Perrow argues that in high-risk technological systems an accident is almost inevitable (1984).[1] The nuclear industry represents such an example, operating with complex technological systems involving human intervention. In addition, it represents a large scale socio-technical system where nuclear technology is coupled with a broader infrastructure of knowledge, social agencies, and political programs, including military ones.[2] Placing civilian nuclear energy in a warfare context, like the military occupation of the nuclear facilities in Ukraine, opens up a discussion about technological risks and threats of the nuclear industry more generally. How inevitable are accidents at nuclear facilities

Construction of Belarus' first NPP started at the Ostrovets site on November 6, 2013.

PHOTO: DIRECTORATE FOR NPP CONSTRUCTION, BELARUS

when they are used as military sites? Does this human intervention in such complex technical systems as nuclear industry raise the probability of an accident that could generate a disaster? Indeed, can nuclear power plants (NPPs) ever be considered strictly civilian?

The history of the Chernobyl disaster provides some evidence of how a nuclear accident not only changed the nuclear industry, but also the entire political system. The explosion at the Chernobyl NPP in 1986 was an example of a "normal accident" that accelerated the collapse of the Soviet system by exposing endemic technological failings, human incompetence, ideological corrosion of decision making, and social mistrust. In addition, the long-term policies of mitigation of the consequences of the Chernobyl disaster in Ukraine and Belarus, including environmental, public health and social justice issues, put an imprint on social attitudes and memories as well as on nuclear programs. This all showed that the nuclear industry itself represents a complex socio-technical system tightly connected with social, political, and natural environments.

Because of its effects, the almost inevitable "normal accident" turned into a large-scale disaster for the Soviet system. A number of scholars have studied the influence that the Chernobyl disaster produced on the development of the nuclear industry in the USSR as well as on the Soviet social and political system as a whole, examining the role of scientists, experts, and politicians in dealing with the situation and post-Chernobyl controversies.[3] This essay investigates how the Chernobyl disaster challenged the Soviet system and engendered changes in nuclear programs, not only revealing the deadening institutional inertia of the Soviet decision-making, but also mobilizing social and scientific communities. It focuses on the question of how a nuclear accident can introduce policy changes by creating the opportunities to

> Because of its effects, the almost inevitable 'normal accident' turned into a large-scale disaster for the Soviet system.

> After the Chernobyl disaster, the Belarusian political authorities did not give up developing the nuclear program.

confront centralized decision-making. At the center of this essay are examples of nuclear decision-making in the Soviet Belorussian Republic after the Chernobyl disaster that illustrate how the decision to build its own NPPs was abandoned in the late 1980s. This essay does not cover post-Chernobyl mitigation policy in Belarus, but focuses on selected archival documents illustrating how the nuclear accident entailed policy system changes.

The Nuclear Energy Program before Chernobyl

By the late 1970s and early 1980s, the transition to civilian nuclear power was underway in most Soviet republics. NPPs were built in Russia, Ukraine, Lithuania, and Armenia, and were planned in Belarus, Moldova, and Kazakhstan. On July 26, 1980, the CC of the CPSU and Council of Ministers of the USSR adopted a secret decree about nuclear power in the USSR that clearly marked the mission and goals of the Soviet nuclear program for the period from 1981 to 1985 and up to 1990: to introduce NPPs with a total capacity of 66.9 million kWt, increasing to 100 million kWt before 1993.[4]

The decision to expand nuclear energy was a consequence on the one hand of the general development of nuclear science and technology and on the other hand, of the necessity to secure economic growth and modernization through the expansion of energy production capacity. The government of the Belorussian SSR was no exception; it was concerned about a shortage of energy resources in the country, while the energy demand was increasing. Indeed, Soviet models of economic development encouraged energy-deficient republics to adopt a strategy focused on energy-intensive heavy industry.[5] As a result, the Belarusian economy was dependent on external energy resources, including gas imports. For the Belarusian authorities, the construction of NPPs offered the opportunity to diversify energy sources and reduce dependence on gas.

In the early 1980s, two nuclear power plant projects were on the political and energy agenda of the country: the first was the construction of a cogeneration nuclear thermal power plant (NTPP)[6] near Minsk, and the second was for an NPP in the northern part of the country. While construction work on the first project began in 1983, work on the second was blocked due to a dispute between the Belarusian authorities and the political authorities in Moscow over geological research at the site. According to the general Soviet plan, the two projects would complete the network of the Soviet reactors in the western USSR along with the Chernobyl, Smolensk, Ignalina and Leningrad NPPs.[7]

The preparation and construction of the Minsk NTPP illustrated all the tensions and controversies within nuclear decision-making and governance during the last decade of the USSR's existence. These tensions were symptomatic of the hesitations in energy policy and the economic difficulties of the so-called stagnation period. The main disagreement, according to the correspondence exchanged at the time between the central and national governmental bodies, was the distribution of supervisory functions over the construction work at two levels: at the higher level, between the Ministry of Energy (Minenergo) and the Ministry of Medium Machine Building (Sredmash), and at the national level, between the organizations subordinate to the Minenergo and Belarusian national organizations.[8] This two-tiered institutional rivalry over the supervision of nuclear projects slowed construction work. The Belarusian authorities expressed great concern about the delays in construction due to problems with the implementation and financing of the project, and stressed the importance of meeting the initial deadlines because of the growing need for electricity in Minsk and other industrial sites. The continued pressure by Belarusian authorities on the USSR Ministry of Energy to accelerate nuclear development indicates that prior to the Chernobyl disaster, Belarus considered nuclear power the primary solution to the country's energy and economic problems.[9]

Policy Changes after Chernobyl

After the Chernobyl disaster, the Belarusian political authorities did not give up developing the nuclear program. On the contrary, several decisions indicated the further promotion of nuclear power in Belarus. In particular, a decision of the

Central Committee of the Belarusian Communist Party, the Council of Ministers of the BSSR and the USSR Ministry of Energy signed on May 26, 1986, emphasized the special importance of the Minsk NTPP for the BSSR and for the successful implementation of the Soviet nuclear program.[10] In this context, not only was a series of measures to accelerate the construction of the NTPP taken, including the introduction of personal responsibility for delays in construction, but the NTPP gained all the important ideological attributes of a Soviet industrial project: the Committee of the Communist Party pushed "socialist competitions" between teams working on the NTPP site, accelerated political education and instruction, and listed the site as a republican Komsomol construction site to attract more young people, while state media regularly reported about the progress of construction on the radio, TV and newspapers.

Despite this decision, no progress was made in the construction of the Minsk plant. By September 1986, the annual construction plan was only 60% complete. This disparity between the political will to launch the plant as soon as possible and the slowdown in construction work in the second half of 1986 indicates a certain degree of uncertainty and institutional inertia in the decision-making process of the nuclear program, and also circumspection about the Chernobyl disaster. These uncertainties became more evident when the USSR Ministry of Atomic Energy ordered the suspension of construction at the end of 1986. In 1987 the Soviet government authorized funds for the mothballing of the station with a special decree.[11] This decree introduced not only additional technical measures to improve the safety of nuclear reactors in the USSR, but also changes in nuclear program development. For example, the construction of nuclear power plants in Minsk and Odessa were mothballed, and NPPs in Azerbaijan, Georgia, Moldavia, as well as the second stage in Armenia, Chernobyl NPP, the fourth reactor at the Ignalina NPP and the fifth reactor at the Beloyarsk NPP, were abandoned. At some nuclear construction sites it was proposed either to replace the RBMK reactor design type with the new VVER type, or to finalize the construction with the RBMK unit. The Chernobyl reactor type was not as yet conclusively and unconditionally rejected as unreliable and unsafe; RBMK construction continued at the Smolensk and Ignalina NPPs.

In the context of energy policy, it was decided to redistribute energy capacity, namely, to increase energy production at thermal power plants and reduce energy production at nuclear power plants. This decision can be seen as due to the indirect influence of the Chernobyl disaster, as can the decision to increase oil, gas and coal production in the near future, and to accelerate the construction of oil and gas pipelines in some regions of the USSR. Fossil fuel production would have its own burden on the economy. In other words, the decisions made in the context of changes in the nuclear program in the first year after the Chernobyl disaster aimed at preserving the level of energy production by using other fossil sources, but not at limiting economic development or environmental burden.

Paradoxically, the decision to suspend construction of the Minsk NTPP relaunched the search for a site for the second Belarusian nuclear power plant. The design and construction documents for the plant had been accepted by the State Planning Committee (Gosplan) and approved by Minenergo in 1986.[12] The first unit, with a capacity of 1,000 MW, was scheduled to be launched in 1994. However, the geological investigations planned in 1987 were never carried out. The Belarusian authorities refused to participate in the organization of the research which made it difficult to move ahead and created tensions between the Belarusian government and the Soviet authorities.[13]

As in other Soviet republics, the participation of local institutions in nuclear decision-making was limited by fragmented consultation. Before the accident at the Chernobyl NPP there was no legal framework for nuclear programs in the USSR, especially regarding requirements for the selection of sites for reactors. A regulation requiring local involvement in site selection appeared only in

The Ostrovets NPP under construction 2017. The plant entered commercial operation on June 10, 2021.
PHOTO: WIKIMEDIA COMMONS

October 1987;[14] the law clearly defined the role of local institutions in nuclear decision-making and enabled the opportunity for scientific mobilization against the pressure of the central scientific and administrative institutions.

In their communications about this law, the Belarusian authorities, in particular the Ministry of Justice, the Ministry of Planning, the Ministry of Health, the Ministry of the Interior, and the Academy of Sciences, insisted that the operation of a nuclear power plant, as well as the choice of site and the use of water resources, should fall under the jurisdiction of the Soviet republics (Article 7, 21, Part II). The national authorities were thus seeking greater autonomy in the area of centralized nuclear governance by highlighting the problem of siting the future nuclear power plant.

The USSR Ministry of Atomic Energy insisted on choosing a site near Lake Seliava, because of its location on halfway between Minsk and Vitebsk. The Belarusian authorities used the means available at the time to resist the pressure and to circumvent this choice, in particular by mobilizing the scientific community. The Belarusian Hydrometeorological and Environmental Control Service, the Belarusian Geological Department, the Scientific Council on Biosphere Problems, and the Institute of Geochemistry and Geophysics sent reports and studies to Moscow indicating that the nuclear power plant could not be installed near the lake for ecological, geological, sanitary and infrastructure reasons: the high level of groundwater, insufficient water resources in the area to meet cooling needs, the high risk of contamination of the lake, as well as of the Baltic and the Black Seas, in case of an accident, and the location about 100 km from Minsk, a city with more than one million inhabitants, and only 40 km from the Berezinskij nature reserve.[15] On May 26, 1988, under pressure from experts and political institutions, the USSR Ministry of Atomic Energy decided to move the site to the Vitebsk region, on the northern border with Russia; the start of construction was planned for 1990. Yet only in October 1989, after the first session of the Congress of People's Deputies, during which deputies from Belarus and Ukraine spoke publicly about Chernobyl,[16] did the Council of Ministers make the final decision to abandon the construction of a nuclear power plant in Belarus because of the consequences of the Chernobyl accident.[17]

Anti-Nuclear and Environmental Justice Claims after Chernobyl

Protests in the late 1980s reflected greater openness in the decision-making process and influenced the plans to build nuclear power plants in Belarus. In the first years after the accident, the protest was closely related to mobilization of the victims of the Chernobyl disaster: letters and complaints from citizens to communist officials were a privileged form of claims. The Belarusian government received 626 letters and complaints related to the Chernobyl accident in 1986. The first complaints from citizens, dated June 1986, were marked by the desire to help: hosting evacuated families from contaminated areas, donations, and voluntary participation in the cleanup.[18] Over time, the content of these letters changed, indicating a shift in the perception of the disaster. In addition to a continuing desire to help, letters more often expressed concern and anxiety about the health of individuals and the safety of the existing power plants. The residents of Minsk, in particular, openly questioned the construction of the nuclear power plant near their city.[19] They soon made claims for public participation in the decision-making process, something unheard of before the Gorbachev era: "Referring to the resolution 'On transparency (*Glasnost'*)' of the nineteenth conference of the Communist Party of the Soviet Union, the citizens demanded the organization of public debates on the most important construction projects of the republic with the consideration of national, ecological, social and other particularities".[20]

The anxiety over the continuation of the nuclear program reflects the emergence of anti-nuclear attitudes generated by the continuation of the nuclear program, mainly in the Vitebsk region, where the nuclear power plant was planned. Between October and December 1988, the first anti-nuclear publications appeared in the national and local press, and workers from local enterprises expressed their anti-nuclear demands at communist party meetings. Following a party meeting at the Vitebsk television factory on October 14–15, 1988, Communist workers declared, "The entire workforce of the enterprise expresses its protest against the construction of a nuclear power plant in the Vitebsk region".[21] Workers at a similar meeting at the Vitebsk Light Industry Technological Institute supported the workers of the Vitebsk television factory.[22]

This anti-nuclear dissent in the Vitebsk region soon went beyond the limits of enterprises and workers' meetings with an appeal against the construction of the power plant signed by the residents of Vitebsk (252 signatures) and addressed directly to Mikhail Gorbachev:

> **'[...] We ask you to reconsider the decision to construct the Belarusian nuclear power plant 53 km from our city, as the Vitebsk region does not need additional energy sources or dangers! [...]'.[23] This anti-nuclear appeal was supported by the local authorities of the Vitebsk region who refused to conduct the technical, geological and geophysical studies of the site of the future power plant, justifying their decision by 'the demographic and environmental situation in the region' and 'public opinion'.[24]**

At the end of December 1988, the Council of Ministers of Belarus notified the Ministry of Atomic Energy of its refusal to build the Vitebsk NPP due to the growing protests that were "justified by the serious consequences of the accident at the Chernobyl nuclear power plant, the presence of a large number of nuclear power plants around the country and the fear of possible radiological contamination of its territory, and a difficult environmental situation, generated by large enterprises of the chemical industry".[25]

The anti-nuclear and environmental claims expressed in late autumn 1988 illustrated collective concern about nuclear power in Belarus and put an end to construction. These concerns were not yet institutionalized or embraced by new political actors, nor revealed opposition to the communist government, its immobility, lack of transparency, and the absence of information about the Chernobyl disaster. Dalhouski[26] explains the lack of protest in Belarus in these years by the lack of information and data on radiological

Protests in the late 1980s reflected greater openness in the decision-making process and influenced the plans to build nuclear power plants in Belarus.

contamination, but also by a "Chernobyl social contract." This contract consisted of providing guarantees of health safety through decontamination and improvement of infrastructure, medical and food services in the contaminated areas, as well as introducing a regime of compensation and material allowances and avoiding large-scale evacuations and migrations in exchange.[27]

A year later, however, local protest against the construction of a power plant in Belarus transformed into a nationwide political mobilization and contributed to the unfolding of public controversies around the consequences of Chernobyl. The first publications in the press about the extent of radioactive contamination after the Chernobyl disaster and political statements criticizing the management of the disaster by the Soviet authorities fueled an anti-communist mobilization campaign. In early 1989 the National Front in Belarus began to exploit Chernobyl for national mobilization purposes, particularly during the disaster commemorations held in April and September.[28]

At the same time, the effects of the Chernobyl disaster began to appear in sociological data, thanks to the first surveys conducted in the contaminated territories. These surveys revealed how social anxiety about public health transformed into political attitudes towards government and public institutions in the context of the lack of information about real accident consequences. For instance, in 1987, 55.5% of respondents were highly concerned about their health and that of their relatives; in 1992, 25% of respondents considered the help of foreign governments and organizations to be more significant that national efforts; 52.8% thought that the compensation provided for victims of the disaster was insufficient and its distribution unequal and 75% of the respondents considered that information on the real consequences of the disaster had not been made public.[29] These data indicate that environmental justice claims related to the health consequences after Chernobyl turned into criticisms of the government' s lack of transparency and inaction in the face of the disaster and how ignorance of the consequences creates political risks and uncertainties. After Chernobyl, nuclear power became associated with a mixture of risks, controversies, uncertainties, and mobilizations in the context of political change. It became a kind of "hybrid" energy, when the technical, scientific, and natural properties of an energy object are coupled with the social and political problems produced by its harmful effects.[30] Civilian nuclear energy uses turned into a high risk technology. It represents a complex and vulnerable technical system prone to "normal accident" that could generate consequences capable of transforming political and social systems. It makes the "normal accident" overpowering by its large-scale effects. In this sense, civilian nuclear energy should be framed and controlled at the same scale and level that the military uses. Thus, civilian and military uses are coupled; a civilian nuclear object could be easily transformed into a nuclear threat. However, living with high risk systems and disastrous experience does not provide knowledge about how this threat can be reduced to zero; it can only be limited in time and space.

Conclusions

This short essay argues that the nuclear industry should be considered as a large socio-technical system involving broader knowledge infrastructure, social agency, and political decision-making, and generating risks capable of introducing policy change and transforming political systems. The Chernobyl disaster illustrated how far the technological risks of the nuclear industry were underestimated and how "normal accidents" and ignorance could generate controversies, reverse decision-making, and mobilize social and scientific communities.

> The Chernobyl disaster affected the implementation of two major nuclear projects in Soviet Belorussia.

The Chernobyl disaster affected the implementation of two major nuclear projects in Soviet Belorussia. The problems encountered in the construction of the Minsk NPP in the early 1980s testify to the institutional tensions in the governance of the nuclear program, while the discussions and controversies around the project for a second nuclear power plant in Belarus were explicitly related to the consequences of the Chernobyl disaster. They show how, as the public learned more and more about the failings of nuclear governance and the dangers of Cher-

nobyl radiation between 1987 and 1989, the decision-making process became more receptive to the demands of national authorities. Both projects were of particular importance for the economic, industrial, and social development of the country. Abandoned in the 1990s after the Chernobyl disaster, and after independence, they prompted discussions about whether a nuclear program in Belarus was needed at all.

Public policy and disaster studies indicate that governance in a post-accident situation can involve substantive policy changes, and have the potential to disrupt rule so that real transformation of the policy system might follow. The case of Chernobyl disaster and recovery policy in Belarus reveal that the government's first political decisions were uncertain, belated, and limited, reflecting the effort to find a balance between further promotion of nuclear energy and the necessary introduction of reforms to safety protocols, all while dealing with the needs of affected populations. The decision-making trajectories were changed in a circular manner, starting with the suspension of the construction of the plant near Minsk at the end of 1986, followed by the increase of pressure on the political authorities to build a new plant between 1987 and 1989, and ending with the rise of the mobilization of the scientific community and anti-nuclear claims in Belarus.

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Wasting as Social Wealth

Industrial Toxic Waste and the Limits of Environmental Politics

by **Damir Arsenijević**

In early February 2023, the government of the Federation of Bosnia and Herzegovina announced it would allocate around 1 million Euros to clear out carcinogenic toluene diisocyanate (TDI) waste from the privatized and disassembled Chlor-Alkali Power Plant (known locally by its Bosnian acronym, HAK). The HAK plant is located a few kilometers from the entrance of the city of Tuzla, in north-eastern Bosnia and Herzegovina. Provisional estimates of the volume of this carcinogenic waste range from 1370 to 1750 tons.[1]

Such an announcement ought to be greeted as welcome news, except that the Federal government completely glosses over and disguises the following glaring fact: that, insidiously, for over 30 years, TDI waste has been poisoning and killing Tuzla's citizens because the Polish company Organika, which bought and privatized HAK, buried it in and around HAK, in unknown locations, with complete disregard for safety regulations.[2] Now, the already impoverished population of Bosnia and Herzegovina are forced to use scarce public funds to clean up a deadly threat, created by the private owner, and forced to accept a culture of impunity for such illegal acts of environmental violence.

In this article, I establish and argue for the connection between environmental violence, international finance, and power in Bosnia and Herzegovina. I will also propose a reframing and reconceptualization of the dominant narratives of privatization and deindustrialization of Bosnia and Herzegovina that coincided with the immediate ending of the 1992–1995 war.

Examining hazardous waste as a symptom of the never-ending transition of socialist Bosnia and Herzegovina into a so-called capitalist liberal democracy re-politicizes the process of "wasting" environments and human lives, revealing it as part and parcel of such transition. In other words, the argument that companies which privatized unprofitable industries in Bosnia and Herzegovina had little time or financial interest properly to dispose of hazardous waste is a cynical smokescreen and should be vigorously challenged. The opposite is true – there is immense value to these privatizing companies in the exploitation of the

Corroding pipes in HAK factory with unknown quantities of chlorine.

PHOTO: SANJA HORI/FRONT SLOBODE

"wasting" environment and to the "wasting" and "wasting away" of social relations precisely to extract profit, in the form of cheap labor. In an already decimated and despoiled landscape – geographically, economically, politically, and socially – cheap labor is the ultimate "resource" being "extracted" from those war-traumatized communities that already live in abject poverty. This is what should be conceptualized as environmental violence.

The Value of Waste in Bosnia and Herzegovina: Reframing the Debate

"The children are born ill and when people start living here, they know what it is that they will die from."[3] Thus speaks Goran Stojak, the head of small local community called Bukinje, in the catchment area of the city of Tuzla, located directly across the road from the coal-operated Tuzla Thermal Power Plant and its five coal slurry sites. He speaks of the decimation of this local community due to various types of cancer and the horrifying silence surrounding these deaths by the public health institutions and by the authorities. In her research, conducted for a local non-governmental organization Centar za ekologiju i energiju [Center for Ecology and Energy], Dr Nurka Pranjić, from the Department of Occupational and Environmental Health of the University of Tuzla School of Medicine, found that the mortality rate from cancer in Bukinje stood at 53% compared to other neighborhoods in Tuzla.[4] The five coal slurry sites cover an area of 250 hectares (or 330 football fields), and are continuous sources of contamination of earth, water, and air. Coal combustion residuals in the slurry have been found to contain high levels of arsenic, cadmium, chrome, lead, and mercury.[5] Waste waters near the slurry sites contaminate agricultural land used by the local population. In summertime, winds stir up and carry the contaminated coal slurry dust and scatter it further afield.

That Bukinje stands as a metonym for the poisoning of the country at large by industrial waste is evident in this fact: Bosnia and Herzegovina ranks as the second deadliest country in the world by the UN Environment Programme as indicated in the number of

Bosnia and Herzegovina ranks as the second deadliest country in the world by the UN Environment Programme.

Huge metal domes in HAK with abandoned toxic propylene dioxide.
PHOTO: SANJA HORIĆ/ FRONT SLOBODE

deaths per head of population caused by air pollution.[6] Emissions of sulfur dioxide (SO_2) have been recorded as exceeding the permitted limits by 166 times: for example, in the city of Zenica in 2015[7] whilst, according to the initiative "Unmask My City", Tuzla Thermal Power Plant is one of the ten heaviest polluters in Europe. It is estimated that air pollution costs Bosnia and Herzegovina 21.5% of its GDP annually.[8] In terms of lives lost due to pollution, starker figures are reported by the European Environment Agency. In its 2020 report on air quality in Europe, the EEA estimates that a staggering 60,500 years of life are lost each year in Bosnia and Herzegovina because of air pollution.[9]

Deindustrialized zones in Bosnia and Herzegovina house abandoned and unguarded toxic industrial waste that also kills daily. The feigned care by Bosnian authorities in allocating 1 million Euros for a clean-up, mentioned in the first paragraph of this article, comes after decades of disregard of and the imposition of silence about the deaths of impoverished metal pickers. Unaware of the true danger of the place, these desperate people would enter the unguarded HAK site to scavenge for scrap metal, and in the process, would then be exposed to residues of chlorine gas left over in corroding pipes. Even more concerning is that the authorities made no mention of other types of toxic waste that remain unguarded after the factory was privatized: 120 corroding barrels of mercury, 47 tons of propylene dioxide, and unknown quantities of chlorine. The authorities, through such feigned care, try to erase their own complicity in how hazardous waste came to be illegally dumped there in the first place. This is an attempt to conceal their own responsibility for these unnecessary deaths because, for almost three decades, these toxins – in the earth, the air and the water – have been poisoning communities. Thus, this abandoned toxic waste has come to be regarded as a natural catastrophe, disconnected from its actual history and politics.

The case of HAK is not an isolated situation, but is more of a symptom that can be observed in the application of wider processes and policies applied throughout Bosnia and Herzegovina as it was deindustrialized following the end of the 1992–1995 war: first a factory would be devalued through lack of investment and neglect; then receivership would be declared, leaving workers stranded with years of unpaid salaries; a private investor would buy a factory at a ridiculously cheap price, making promises to restart production, a commitment which would speedily be reneged on. Ultimately, a factory would be stripped of all valuable assets –

including all the monitoring and safety systems for hazardous materials – workers would lose their jobs, until abandoned hazardous waste, openly apparent and deliberately concealed, was all that was left, unguarded and leaking their deadly poison into communities.

Historically, at the end of the 1990s and the first decade if the 2000s, deindustrialization in Bosnia and Herzegovina, and indeed throughout Yugoslavia, was shaped by the increasingly authoritarian mode of social, cultural, and economic regulation, a comprehensive US-led regime, which George Steinmetz has termed "authoritarian post-Fordism." This regime amalgamates two political approaches that characterized the post-Fordist mode of capital accumulation and regulation, which were formerly divided between the domestic mode (relatively democratic and open), and a foreign imperialist mode (authoritarian and closed).[10] Through the authoritarian regime, organized labor was destroyed and a self-regulatory mode was introduced and fostered amongst the labor force, characterized by willing self-domination and the workers' fight for violent domination over others. With organized labor in disarray, privatization and deregulation are ideologically represented as a quasi-objective, and necessary for growth, which further contributes to capital's systemic imperatives to maximize returns on investment. For industry in Bosnia and Herzegovina, this meant an "open season" scenario for greedy capital, in which the name of the game was not to drive down the production costs, but rather to purchase factories cheaply and to extract value from them. The perceived "value" lay not only in stripping them of assets, but also in abandoning and hiding toxic waste – itself a perverted source of value – to be extracted through a range of activities: from structural projects, feasibility studies, working groups, foreign and domestic expert companies: all laying claim to public funds allocations to address environmental instability, each applicant claiming that it could be the one to deliver that remediation. However, it is ultimately the poisoned population that continues to pay: whether it is families going into debt to afford treatments for the effects of toxic waste, or in the population's acquiescing to the use of public funds – citizens' money in the first place – to pay for the clearing up of toxic waste.

It was only in the aftermath of the large-scale, country-wide 2014 workers' protests in Bosnia and Herzegovina that studies on deindustrialization in Bosnia and Herzegovina emerged, examining critically the extent to which voucher-style privatization of companies had led to gross socio-economic injustice.[11] In the academic discourse, this attempted to shift the focus from identity politics, which was dominated by the fetishization of ethnicity, to a new problem – that of the widening class gap and rising levels of poverty in Bosnian society. Whilst this is an important and much-needed shift in discussion, it still engages insufficiently with the authoritarian dimension of capital accumulation during the war and in its immediate aftermath.

Crucial for the understanding of the authoritarian dimension of value extraction and capital accumulation in Bosnia and Herzegovina is the need to go beyond analyzing toxic industrial waste as a mere unforeseen consequence of factory privatizations. The toxic waste and contaminated environment are active agents that continuously produce their effects and continue to have a certain value that can still be extracted: as such, they occupy a structural position in capital accumulation – in that they shape the production of subjectivities under the authoritarian regime of capital accumulation. It is from the vantage point of hidden industrial toxic waste that we must examine the transformation of both property – as socialist Yugoslav socially-owned property or *društvena svojina* – and also the transformation and destruction of organized labor – from the political subject, enshrined in the socialist constitution as the working people or *radni narod*, to disenfranchised "mere workers" in the deindustrializing privatization context. It is precisely in such a reframing, as proposed here, that illumination of a key process in the production of the perfect authoritarian post-Fordist subject

> Toxic waste that remain unguarded after the factory was privatized: 120 corroding barrels of mercury, 47 tons of propylene dioxide, and unknown quantities of chlorine.

> Deaths caused by environmental violence – slow or quick – continue in the aftermath of war.

in Bosnia and Herzegovina will be conceptualized as "wasting".

Wasting offers us a perspective to focus on socio-political relations in which people and nature are created as waste from the outset. This is to understand that the current form of social domination in Bosnia and Herzegovina that was initiated by privatization is grounded in "wasting" as a form of social wealth that confronts and paralyses living labor—the workers. Wasting depresses the value of the working bodies. Further, as Zsuzsa Gille argues, a waste regime is a form of social organization that precisely labels that which counts as waste and arranges its displacement.[12] The position of Bosnia and Herzegovina, together with other countries that are not EU members, but are surrounded by EU-member states, is one of a deliberately created political waste ground; these countries are zones of exception, in which toxic narratives of instability and hopelessness are circulating: a "political dump" surrounded by "political paradise". In this sense, Marco Armiero rightly detects the *Wasteocene*, as a frame that both examines the inner workings of how social relations come to be wasted, and thus are productive of wealth and security for some, at the cost of othering and excluding certain populations. The Wasteocene also politicizes disposable bodies and environments that "sabotage" – in the eyes of its beneficiaries – the social domination implied in waste as a form of social wealth.[13] As I have argued elsewhere, this is a form of *waste colonialism*, which refers to the deindustrializing practices of finance capital that that greedily exploit factories, strip them of their assets, remove capital from communities where these factories are located, and then exit, leaving toxic substances, unemployment, and toxic narratives to circulate in these communities.[14]

Now, we can properly examine the quotation by Goran Stojak at the beginning of this subsection that shows how populations are produced as mere bodies, who are now sacrificed for marginal gain. Is this not the ultimate end point of what Wendy Brown calls "sacrificial citizenship"[15] — as "citizen" in its oblatory function in relation to the imperative of growth in the increasingly authoritarian practices of finance capital? Our working day becomes extended to a lifetime: as time that our bodies spend filtering and metabolizing the toxins from industrial waste: from when we are born, we know what will cause our deaths. This is a sacrificial abstract form of domination in which value is extracted from communities where all children have cancers; from metal-pickers who inhale chlorine and their lungs burn; from impoverished agricultural communities using contaminated water; from people who venture into unmarked areas with landmines who are killed by them. All of Bosnia and Herzegovina is a shrine in which a sacrificial ritual takes place daily: deaths caused by environmental violence – slow or quick – continue in the aftermath of war; populations unwittingly relinquish their lives; ethno-capitalist elites, as the current high priests, demanding ever more deaths, rulers of time and space who exert the power to proclaim if and when there will have been enough dying. We are in the domain of the mythic, in the domain of destiny. In this domain, there is no space for subjectivity.

HAK – the Site of Fear

HAK was built between 1972 and 1976 with British and Canadian investment. It used to be one of the largest socialist Yugoslav mining and chemical industrial complexes, employing around two thousand workers from communities in the region of North-Eastern Bosnia. In 1979, the Japanese company, Mitsui, invested in the building of the second phase – HAK 2 plant – that produced toluene diisocyanate (TDI), a material used in the making of flexible foam. As a result of the domestic and international exports of its products, HAK reached the apex of its production and financial fortunes. Now, it sits as an unexploded bomb — encasing the huge volumes of toxic waste that lie unsupervised in its over-ground spheres and its underground pipes, with yet more toxic waste buried in unmarked locations around the ground on which the former factory sits. It is a dystopic site.

HAK struggled to revive production in the

immediate aftermath of the 1992-1995 war. There was no political will to find investments that would achieve the revival of this industrial giant, which was one of the major local employers pre-war. This marked the start of "open season" on HAK for speculators. Between late 1999 and 2002, the HAK workers carried out a series of strikes. By 2001, the workers' salaries were 5 years in arrears. An already difficult situation was exacerbated by electricity and water state-owned suppliers threatening to cut the supply of utilities to the plant. During wartime, HAK workers undertook to keep the plant running and to supply necessary products to the military, hospitals, power plants, and to the population in general, without remuneration. Now, only a few years after the war, these war-time contributions went unrecognized. By then, the company was in receivership.

During receivership, decisions were made to start dismantling the plant in order to pay down the company's debts. This set the tone for the rest of Bosnian industry as to what path the receivership would take: the realization of assets rather than the revival of production. Enes Husarić, a HAK worker, remembers this as a moment when he almost burst into tears on hearing that the Electrolysis Plant was to be dismantled:

> **2004, in January, the Chief Receiver comes to see me as says 'I have a proposal', 'What proposal', I asked? He says: 'We'll take down the Electrolysis Plant'. I almost burst into tears.... I said, 'I won't be a part of it'. I got angry, went to the plant, and slumped down on the verge of tears. On January 7, 2004, a team arrived to dismantle the Electrolysis Plant, copper is the first to be picked. In the first picking, we stripped 22 tons and 640 kilos of copper. Pure copper. Then 20 or so tons of titanium, some 50 or so tons of aluminum. And the third picking, in April, some 16 additional tons of copper. Only iron remained. And the command hall was destroyed.**[16]

In 2006, the Polish company Organika bought one part of HAK (renamed "Polihem" in the privatization process) and already, by 2007, it had started laying off workers. Workers remember how Organika threatened any worker attempting to form unions with instant dismissal. The corporate subterfuge that Organika carried out involved reneging on the promise to double production, firing the workers, and starting to dismantle the production plant and selling it as scrap metal. As the HAK trade union leader, Miralem Ibrišimović, recounts:

> **Organika disbanded the rescue teams, halved the number of firefighters, halved the number of workers in production plants, stopped the acquisition of protection equipment and gear for workers, and above all stopped mercury waste treatment, so that mercury was directly spilled into the Jala river.**[17]

Organika completely neglected hazardous waste, primarily mercury, which was abandoned on site after the electrolysis plant was dismantled. There are allegations that some quantity of mercury was sold to Canadian companies, whilst the slurry containing unknown residual quantities of mercury was ordered by the management to be packed into plastic barrels and was just left lying in the shell of the factory. After the electricity supply to the plant was cut off, disabling the monitoring gauges for hazardous chemicals held at the plant, it was impossible to estimate the remaining quantities of chlorine in tanks. These abandoned unknown quantities of chlorine probably pose the most hazardous threat to the population and to the environment. However, this problem is completely shut down in public discourse.

GIKIL – the Culture of Impunity

GIKIL (*Global Ispat koksna industrija Lukavac*) is the leading producer of metallurgical coking coal in the region of South-East Europe. Through various ownership schemes, the GIKIL plant has been co-owned by the Mittal family since 2003. GIKIL has neglected

Workers remember how Organika threatened any worker attempting to form unions with instant dismissal.

GIKIL 5, producer of metallurgical coking coal, is operating since 2018 without environmental permit.
PHOTO: SANJA HORIĆ/FRONT SLOBODEL

environmental protection to such an extent that outcomes and impacts of major accidents are now becoming unavoidably seen and felt: i.e. worker injuries, mass fish die-offs in the Spreča River, and threats to the life of the surrounding population. The company lost its environmental permit due to ammonia and tar spills in 2018, when, due to public pressure, criminal charges for breaking environmental protection laws were filed. At this point, in order to avoid personal responsibility, the CEO and the owner of GIKIL, together with their associates, fled Bosnia and Herzegovina. The company, meanwhile, ignored the order to stop production and continues, to this day, to operate without an environmental permit.

GIKIL was created as a merger between the local chemical company Lukavac (KHK) and Global Infrastructure Holdings Limited. Subsequent changes to the privatization contract list Global Steel Holdings Ltd (GSHL) from India as the co-owner. The court register breaks down the ownership of GIKIL thus: 67% owned by the Tuzla Canton Government and the remaining 33% owned by GSHL. However, this apportioning of ownership is not reflected in day-to-day production and practice. For over ten years, the India-based and owned GSHL has been fully managing and making the decisions about GIKIL's operations that have been detrimental both for the workers of GIKIL and for the environment. The journalist Amarildo Gutić succinctly outlines the illegality underpinning GSHL's dealings within GIKIL:

> **GSHL never fulfilled the contractual obligation to invest 43 million euros in the coking coal producing plant. Additionally, it drove the plant into debt. It mortgaged GIKIL to obtain loans worth several million euros which it then showed as investments. GSHL also bought raw materials from its foreign affiliate companies and represented this as an investment into GIKIL. As a result, GIKIL's debt has ballooned to 160 million dollars. Millions of euros were extracted out of GIKIL and were billed as 'consultancy fees', which consultancy services were then provided by affiliate companies from India.**[18]

Artificially created financial losses provided GIKIL with the financial rationale to scrap health and safety measures for workers, to stop payments of salaries to workers, and to commence laying off the skilled workforce, all of which led to environmental accidents. Zijad Šehabović, the former lead engineer in GIKIL says:

> **People who buy factories eschew environmental protection obligations because this is an additional cost. But this cannot be allowed to be neglected. If the focus is on the extraction of profit alone, then you have a great number of people whose health is affected because of pollution, which costs far more than the profit extracted. The problem has been constant layoffs of the workforce. We've seen a decrease in the workforce and no modernization or automatization of production that would make up for the contraction in the size and skill-base of that workforce. This leads to many things happening without proper supervision. This, in turn, leads to conditions for environmental catastrophes to happen. If you lay off the skilled workforce and don't replace them, then such catastrophes are bound to happen.**[19]

At the beginning of August 2018, a major environmental accident occurred. A reservoir with ammonia containing tar exploded. The chemicals were released into the River Spreča, whilst also being released into the atmosphere. The Spreča River flows through 12 municipalities and impacts on the lives of around half a million people, many of whom rely on the river for agriculture. Tomislav Ljubić, the main prosecutor of the Tuzla Canton Prosecutorial Office, commented on the scope of this accident in stark terms: "[...] the cost of preserving 1,000 jobs in GIKIL may be the poisoning of half a million people in Tuzla Canton".[20]

A couple of days later, on 9 August 2018, Mr. Ljubić further assessed the level of environmental catastrophe:

> **To put it clearly, one person with whom we have been in touch commented thus: 'To hell with the fish and the ducks. This is so dangerous for the health, lives, and bodies of the people'. Our prosecutors went to the factory by order of the court. And what they found there was horrifying. It is a different planet there. Workers walk around carrying glasses of milk and have no protection whatsoever. Our prosecutors came back from the factory having lost their voices because of their exposure to the fumes being released in the factory.**[21]

Environmental activists of the non-governmental organization Eko Forum Lukavac regularly pointed to how each Tuzla Canton government favored GIKIL and disregarded the reports of pollution provided to them by environmental activists. In our conversation, Mr. Bajazit Okić from Eko Forum Lukavac depicted their activist struggle against pollution produced by GIKIL in this testimony:

> **In 2 years alone, there were 15 official reports by the inspectorate and each of these recorded and established the existence of excess pollution. Whenever we reported environmental accidents in GIKIL, GIKIL management always negated this and claimed that no accident had happened. This is the way in which they have been deceiving the public. Our authorities kept shifting responsibility amongst themselves every time we threatened to file lawsuits. And then we decided to file lawsuits...our legislation is so weak that it permits company owners to extract profit at the expense of the health of the people.**[22]

He added, with regret, that if citizens' protests and reports of pollution had been taken seriously, the major catastrophe of August 2018 could have been avoided.

According to him, particularly insidious have

Artificially created financial losses provided GIKIL with the financial rationale to scrap health and safety measures for workers.

> The question is: how to move beyond the liberal rights-based approach and demands-based politics.

been the corrupt practices of the municipal and cantonal authorities and the lies that GIKIL management has spread within the community, i.e. that the aim of Eko Forum Lukavac was to close down GIKIL. This is how predatory capital combines the threat of toxicity together with the threat of poverty in order to force the affected communities to become docile subjects that will sacrifice their health for the profit of big companies.

Conclusion

Discussion around environmental violence and rights suffers from a paralyzing dichotomy: rights of the disenfranchised groups vs. violence of actors causing environmental instability. The question is: how to move beyond the liberal rights-based approach and demands-based politics, in which the state is perceived as the agent that grants rights, putting those who are disenfranchised in a subservient position to demand? In this article, I suggest that the core concept for the understanding of deindustrialization of Bosnia and Herzegovina and the production of new subjectivities in this process is the practice of wasting. Wasting not only produces people as waste but also diminishes, devalues, and ultimately destroys social relations by producing and circulating toxic narratives of hopelessness and despair. How can communities overcome such paralysis caused by terror and reverse a destructive extraction of value from them in a protracted dying? In other words, in the face of such destruction, how can communities imagine any form of a hopeful future in which they can play a part and in, doing so, thrive? What is the form of recuperative and restorative politics?

It begins by naming as toxic the symbolic violence that produces the terror which paralyses, by confronting it head on, and by putting an end to it. This was done in the 2014 workers' protests, whose slogan was "we are in protest for production". Such a powerful slogan reverberated across the communities in Bosnia and Herzegovina and enabled connections, which are still ongoing, between workers, students, war veterans, artists, and activists. The workers' action goes beyond a mere strike insofar as it redraws the contours of political action. Production here is not a vague glorification of just more work; it is a production of a different possibility, a human action for the sake of the "living labor", not for a "mere worker". Therefore, it is on the side of productive life that nurtures and enlarges the capacities and conditions for life to thrive, not merely survive in a protracted death. This is a move from being a victim to being a political subject. Choosing life means ending the social domination whose foundation is wasting as social wealth. ●

Note: The photos are taken from the film HAK – mjesto straha [HAK – Place of Fear] directed by Azra Jašarević, Damir Arsenijević and Sanja Horić (Production: Association Freedom Front Tuzla, December 2020). Available at: https://youtu.be/u3sC_teDyFs

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Bulgaria

Transforming Human–Wildlife Relations: From Conflict to Coexistence

by **Svetoslava Toncheva**

Current conservation debates address both the shortcomings of historical attempts to preserve biodiversity and potential ways to redress such issues in pursuit of the more successful and just preservation of non-human nature moving forward.[1] Within such discussions, many agree that we need better relations with non-human nature, transcending the strict borders and dichotomies characterizing conventional conservation approaches focused on creation and enforcement of protected areas (PAs). The specific context of postsocialism[2] (see below) has provided space for bottom-up initiatives in contrast to the strictly imposed conservation approaches formulated by external experts, as in the majority of conservation cases globally.[3] The postsocialist space, therefore, offers insights for achieving more successful human-wildlife coexistence beyond the strict nature-culture division which dominates human relations with nature in the Western world. The article addresses this important issue by exploring factors that may contribute to promoting successful coexistence between humans and brown bears within Europe and elsewhere. It does so via comparative analysis of two cases in Bulgaria that evidence different degrees of conflict and coexistence between humans and brown bears, highlighting the main factors that lead to conflict in the first case, as well as those that might instead help to foster coexistence, as evidenced in the second.

Postsocialist Context

Southeastern Europe and Bulgaria, in particular, are leading in Europe in terms of biodiversity but are rarely the focus of existing conservation literature. Bulgaria occupies only 2.5% of EU territory, but supports about 70% of protected bird species and around 40% of PAs (Natura 2000). Yet the country faces numerous threats to biodiversity due to lack of enforcement, corruption, the existence of a grey economy, and disregard of legislation (including European). Bulgaria has undergone a long period of transition after the collapse of the socialist regime – the period of so-called postsocialism[4] – and it is still struggling to find

its way within the common European cultural and economic space. In the last decade and more, the country has faced serious challenges applying European environmental regulations, provoking negative reports from the European Commission claiming that the country has not fulfilled the definition of Natura 2000 protected territories nor clearly introduced measures to protect habitats and endangered species. Indeed, recent assessments conclude that policy measures in relation to about 50% of protected species are insufficient. Given both inadequate application of environmental legislation and plans for its enforcement, building still takes place within Natura 2000 zones. Such issues present serious threats to biodiversity and, together with non-regulated development (and often a lack of state presence), constitute serious challenges for Bulgarian conservation. The lack of formal PAs in some regions such as the Rhodope mountains have, on the one hand, resulted in human–wildlife conflicts that are a serious threat to wildlife conservation. At the same time, this relative absence of government-directed conservation has enabled the emergence of local arrangements, particularly in rural spaces, to govern how humans interact with wildlife.

Brown Bear Protection in Bulgaria

Brown bears are a highly symbolic species for nature conservation and hence have become an important focus of Bulgarian conservation efforts. They were granted protected status by the state as early as 1993 (included in the Red List of Bulgaria) and later through European legislation. Bears' protected status requires that their habitats are included under Natura 2000 protection; however, for various reasons, many remain outside formal protected areas. Such is the case in the Rhodope mountains, a region with one of the highest bear populations where, due to economic interests, no national parks have been established and only small, fragmented areas designated as nature reserves. This makes it one of the regions with the most intense human-bear interactions.[5] The total Bulgarian bear population is currently believed to be 600–800, with the population in Rhodope between 206 and 334 (on the basis of collected genetic samples from hairs and scat).[6] The Rhodope habitat is considered the largest and most important in the country, which, given the lack of PAs and the numerous mountain villages there, has resulted, in a number of cases, in various conflicts that have directly threatened the protected species, and in others, in rather successful human-bear coexistence and mutual adaptation.

Specifics of the Cases

The article addresses the issues of human-wildlife conflict and coexistence via comparative research on two areas in Bulgaria's Southern Rhodope mountains, found in close proximity (separated by only 20 km as the crow flies) and comparable in cultural, religious and ethnic character. The first case exhibits rather conflict-laden human-bear coexistence (with a case just recently of the illegal hunting of a famous bear called Simona[7]) and includes three settlements along the upper flow of the river Arda – Arda, Mogilitsa, and Gorna Arda. They include dispersed hamlets, with a total area population of <600. The low population density and population decline in the postsocialist period have been accompanied by land abandonment, economic transformations and an increase in the bear population (according to the local communities), resulting in a higher encounter rate and establishment of particular relationships and attitudes toward the brown bears. While the economic profile of the area is characterized by a broad shift from traditional livelihoods such as animal breeding and agriculture toward development of rural and ecotourism, the population has also maintained small agricultural plots, animal herds, and other land-based livelihood activities. Bear damage to these has doubled in the recent years (in 2019 for instance from the previously registered 50–60 incidents per year), which together with the limited success of existing compensation schemes has contributed to the increase of human–bear conflicts in the area. This has resulted in predominantly negative attitudes toward the bears, accompanied by feelings of despair among the local populations

> Brown bears are a highly symbolic species for nature conservation.

concerning the possibility of receiving adequate assistance from authorities and conservation experts.

In order to highlight factors that appear to inhibit peaceful cohabitation, I refer to a different study performed in the village of Yagodina, located in the area of the Yagodina-Trigrad gorges, where humans and bears have lived in relative harmony in recent years. Similarly, after the socialist collapse, the population of the area faced the problems of land fragmentation, lack of financial resources for cultivation, social transformations related to urban outmigration, privatization (and in fact abandonment) of existing enterprises and, as a result, scarcity of employment opportunities. The long transition did not improve but actually worsened the area's situation, with the population facing a lack of state or foreign investment and hence being left to develop alternative livelihood strategies in the context of available natural resources. One of these avenues was again tourism, given the village's location in the high mountains proximate to the two famous gorges (Buynovsko and Trigrad) and caves (Yagodina and Devil's Throat) as well as the well-preserved natural environment with extremely high biodiversity. This, among other factors such as the inclusion of the brown bear in forms of ecotourism, has contributed to the lack of conflict in the area and to rather successful coexistence of humans and bears. In the next section I focus on three main factors that characterize human-bear relations: coexistence mechanisms, local knowledge about bears, and their economic dimension (compensation schemes and "bear tourism"), to outline general prerequisites for human-bear coexistence.

Conflict vs. Coexistence

Exploration of human-bear relations in the Arda region demonstrates how different factors contribute to the rather negative interactions between humans and bears and inhibit human–bear coexistence. Among these is the residents' shared belief that there has been an increase in the bear population during the last 10 years, the reason for which includes variety of speculative interpretations.[8] Encountering a bear or signs and tracks such as excrement, overturned stones, damaged anthills, etc. are therefore not unusual for local residents. Bear signs are claimed to be found "all around" the villages and neighboring hamlets, and encountered "every time we exit the village". A major factor contributing to the conflict situation is the transgression of the intimate village space by the bears, evidenced by number of direct encounters, particularly in the village of Mogilitsa, where a bear (or "bears") with cubs regularly crosses the village borders, resulting in "almost the whole village [having] seen a bear" (Fig. 1). Although the exact number of the bear population remains unclear to local residents, the high number of encounters contributes to the belief that the bear population is "increasing" every year due to "lack of control over the population", some claiming that "there are more bears than people". Their number is therefore considered too high for the area around the village and their reduction is seen as a way to improve the situation: "They need to be reduced [...] when the year is good they give birth to 2–3 cubs [...] when there is a mother with 3 cubs nobody dares to go out of the village."

The bears' perceived omnipresence in this case, as well as the occasional crossing of the village space, has evoked a sense of fear and vulnerability among the local population for individual and group safety, as also exhibited in other cases where humans and carnivores coincide.[9] This prevents, in some cases, the accomplishment of traditional livelihood activities as well as livestock breeding, while the latter is not so intensively practiced today. Many people feel unable to protect themselves and their families from potential bear encounters or attacks, while bears are considered "really scary". This perception of insecurity forces the local population to become preoccupied with their safety, living in constant "stress" as the possibility of encountering a bear is real day and night. The government-proposed means for protection of the local population in this context, such as the use of bear-protective spray, are not considered particularly efficient due to the fact that one

Fig. 1. Brown bears captured by camera trap near Mogilitsa.
PHOTO: ROSEN INDJOV

needs to be really close to the bear, and moreover, it requires one's own investments. This is also the case with the measures undertaken by the forestry agents, such as expulsion of a problematic bear, because in most cases the bear returns or becomes aggressive, which only enhances the existing problems. Consequently, locally invented techniques for protection from bears have been developed, such as playing loud music, walking with a torch, using firecrackers, making a loud noise, smoking, placing lights around beehives/gardens, and so forth.

Another important factor inhibiting human-bear coexistence, as the research demonstrated, is the relative lack of knowledge and understanding of bear behavior in the area. As reported by respondents, their fear is namely a result of the bears' perceived "unpredictability", while in number of cases, bear behavior remains misinterpreted or misunderstood. This applies to bear behavior in case of encounter, with some respondents claiming that a "bear has no fear of humans" and would not run away if it encounters one, while others believe that a bear senses the smell and sound of humans and attempts to avoid them. Deeper knowledge held by particular groups (hunters and foresters), however, maintains that bears are considered dangerous depending on the situation. Diverse and dispersed knowledge also exists regarding bear ecology, feeding patterns, etc. Insufficient food supplies in the nearby forests are, for instance, are seen by large number of local residents as main reason for bears crossing the settlement's borders and hence the damage bears inflict. However, not much is seen as related to increased human impact on the surrounding environment related to economic development (forest damage, tourism, logging, etc.) and climate change, influencing bear nutritional supplies, hibernation, core habitats, etc.[10] Lack of detailed knowledge is also registered among responsible agencies, predominantly as a result of the non-establishment of a specialized department to deal with bear issues (with responsibilities of different actors limited to solving problems related to damage and compensation), while bear management in problematic situations such as expulsion and lethal control is divided among different actors and institutions. Consequently, even conservation experts admit that "more work" and state

> A major factor contributing to the conflict situation is the transgression of the intimate village space by the bears.

Fig 2. Beehives dameged by brown bear.
PHOTO: SVETOSLAVA TONCHEVA

support is needed for the successful conservation of the brown bear and prevention of bear poaching which seems to exist in the region.

Finally, the economic damage caused by the brown bears is another important factor for their negative image among the local population. Damage caused by bears refers predominantly to livestock (sheep, calves), beehives, crops (trees and berries), equipment (barrels, cameras), and fodder for wild game (Fig. 2). The loss is further enhanced by the economic situation and underdevelopment of the region, producing a lack of alternative livelihood strategies apart from tourism, in which the bears seem to play an ambiguous role at the moment, ranging from a source of fear to interest for the tourists. The importance of economic loss in attitudes toward bears is reinforced by the perspectives of some respondents who have suffered no damage by bears and therefore "have nothing against them" – unlike others, such as beekeepers, who consider the loss as exceeding its purely economic dimension: "It damaged three of my beehives [...] I want no money, I have them for the honey. I have six sheep but keep them penned in because of the bears. Otherwise what sense does it make to live in a village?"

In accordance with EU regulations, compensation for damage from brown bears can be claimed. However, as evident in the number of respondents' claims, there is dissatisfaction with (and often lack of understanding of) the procedure and perceived inadequacy of the value assigned to the loss. Given all of this, the state conservation policy is considered incapable of embracing the complexity of human–bear relations. Legislation is perceived as anti-human and solely benefiting bears, while the responsible authorities are particularly blamed: "Laws are insufficient. Only benefit the bears. Nowadays it's better to be a bear in Bulgaria."

Exploration of human-bear relations in the region of Yagodina, in contrast, shows how humans and bears have established rather successful coexistence strategies and adapted to living together in a shared landscape. This depiction is characterized by few main factors. First, by nontransgression of the intimate space of both humans and bears and hence active avoidance by both of potential conflict situations. Brown bears in the area are recognized as fellow inhabitants of the shared space by the majority of the local residents, and take an important place in the peoples' lifeworld with famous stories about bear encounters being a widely discussed topic, as well as being characters in local poetry and jokes. The local population's attitude towards the bears is therefore predominantly positive, in part because encounters are rare and because bears are only considered dangerous when they are

Legislation is perceived as anti-human and solely benefiting bears.

threatened or when human and bear territories cross. Still, coexistence is determined by the attitude of both species who attempt to avoid one another and do not enter conflict situations. Respondents are aware of the bears' presence in these shared spaces – nearby forests, meadows, rivers and agricultural lands – and seem able to read the various signs bears leave behind.[11] The lack of protected areas in the region, along with the characteristics of the postsocialist context (such as low state involvement) means that bears are not managed to the same extent as in other parts of the world. Moreover, the lack of conflicts (at present) means that people do not act to deliberately produce a certain kind of behavior or fear in bears or actively try to prevent bears from entering human spaces. The occasional boundary crossing that does take place is not considered a threat by most respondents. This rather peaceful coexistence is reflected in the positive attitude of most local residents when discussing whether humans and bears are able to share the same space or whether bears should instead be separated in PAs: "Bears should be free, in protected territories they would feel like in a prison"; "We can coexist, it's not a problem".

Although knowledge about bears is still non-homogeneous, most people are able to "read" and interpret the signs left by the bears and avoid areas such as core bear habitats. Villagers also express a sense of pride that bears can be seen around the village and are considered symbols of power and bravery. Some elements of local folklore are traditional practices are also related to bears, for instance a practice aimed at reducing post-traumatic stress after a bear encounter called a "casting of a bullet". This is a type of healing magic in Bulgarian folk medicine aimed at treatment of fear. In this case the general knowledge of informants seems beneficial for facilitating human-bear cohabitation and demonstrates that bears occupy a significant place within local people's lifeworlds.[12]

Last but not least, a very important factor for the rather peaceful human-bear coexistence in Yagodina is the specific form of tourism recently developed that comprises excursions to encounter bears. Inclusion of brown bears in tourism began with construction of a special place for bear observation: a bear hide (Fig. 3). Located 30 minutes' drive from the village, it attracts tourists from around the world, also in the form of specialized excursions organized by a British tour operator, in cooperation with the local hunters (Fig. 4). This bear ecotourism is aimed to function as an economic incentive for brown bear conservation, which seems successful so far. Local people are also aware that the foreign groups undertaking bear tourism stay in their village for a week specifically because of the bears. This suggests that they realize an economic benefit from their coexistence with the bears, since tourists don't just occupy the village hotels and guest houses but also eat

Fig 4. Bears at the bear hide. PHOTO: JULIAN PERRY

Fig 3. The bear hide. PHOTO: SVETOSLAVA TONCHEVA

village food and purchase local products and services. Bear tourism, moreover, contributes to the various activities of the hunting union such as provision of food for game animals at the feeders, the planting of oat fields that keep the game in the region, social gatherings, and so forth. As currently no bear-inflicted damage has occurred, bear tourism functions, particularly for the hunters, as a direct incentive to maintain the bear population in the area.

Towards Human-Bear Coexistence

The two different cases demonstrated how various factors prevent humans and bears in the region of Arda from establishing successful cohabitation strategies and adapting to living together in a shared landscape. In Yagodina, on the contrary, the postsocialist context (lack of concrete management strategies imposed from outside) has led to the establishment of bottom-up mechanisms of mutual adaptation and coexistence. A main factor contributing to this in the first case is the regular transgression of the village space by the bears, accompanied by a common misinterpretation of this behavior by the local population. Bears are perceived as "unpredictable" and provoking feelings of "stress" and "fear", preventing the accomplishment of forest activities. In Yagodina, in contrast, humans seem able to "read" the signs left by the bears and incorporate this into practices of respect and mutual adaptation. This happens to a much lesser extent in the case of Arda, wherein people put less effort into studying and understanding bear behavior. The bear here has become, on the contrary, a symbol of threat to personal safety and an obstacle for development for the local population. In Arda, general knowledge about bears seems much more fragmented compared to the case of Yagodina, ranging from possession of facts to overestimation of various dynamics to simple vagueness and uncertainty. The rather peaceful coexistence, on the other hand, grants bears a significant place in local people's lifeworlds, promoting a rather positive image of the bear and hence more efforts in knowing the bears. Finally, the case of Yagodina has demonstrated how locally developed ecotourism focused on bears' functions as an economic incentive for local people to tolerate the bears' presence.[13] In the case of Arda, on the other hand, a combination of factors such as the underdevelopment of the region, the ambiguous position of bears in tourism, and the reliance on conventional compensatory mechanisms, fails to mitigate the effects of negative human–bear interaction.

The comparison of the two cases' findings about human–bear conflict and coexistence in two contrasting case studies has highlighted a variety of characteristics that help to account for this discrepancy. First, they support the assumption of the need to encourage mutual tolerance and adaptation within shared landscapes.[14] This includes further encouragement of tolerance, for example through dissemination of guidelines for negotiating human–bear encounters based on efforts to understand the bears' perspective (behavior). The lack of genuine commitment to democratic participation[15] appears another obstacle to successful coexistence as demonstrated by the case of Arda, evidenced by widespread feelings of despair and lack of trust in state authorities and conservation agencies. A shift from conflict to coexistence in this case would, therefore, likely be facilitated by greater democratic engagement, achieved via inclusion of local authorities and community members in discussion and decision-making. A form of democratic engagement is also the bear tourism established as local initiative that has become an important source of funding from and for bear conservation, contributing to relatively peaceful coexistence. The case of Arda, by contrast, exhibits no similar mechanism; on the contrary, in this case the existing financial mechanism intended to support bear conservation – the damage compensation scheme – seems to be achieving the opposite due to operational deficiencies.

Finally, the postsocialist context, characterized by low state intervention and limited investments in remote mountain areas, has provided opportunities for development of bottom-up initiatives that, in some cases, have led to successful human-wildlife coexistence. This article has aimed to outline some guidelines

regarding how to catalyze similar transformative change in regions where this is not the case. How to practically achieve this remains, however, a further question to be explored.

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Czech Republic

A Nation of Nature Lovers, yet Reluctant to Take Action

by **Eva Richter**

In the 2016 European Social Survey, Czech citizens were among the least worried about climate change in Europe (together with Polish and Estonian citizens). They thought about climate change the least and, on average, felt the least responsibility for reducing climate change.[1] On the other hand, Czech citizens claim to have a strong and positive relationship to nature: three quarters of them (76%) believe in environmental protection and 82–84% of them agree that the natural balance is fragile, and that people generally abuse the environment. Nature is also the number one topic of interest to Czech people in the media (80% are interested) and 74% of them like spending time in nature.[2]

So how is it that such a nature-loving nation is so reserved about climate and environmental action? This chapter maps the history and development of the entanglement between the environment, the state, civil society, and the private sphere in the Czech Republic from the Communist era through the transition to the present time. It shows how the relationship between citizens and the state through the public sphere shapes political and public responses to environmental problems and climate change. The skepticism of Czech people toward the public sphere and their preference for keeping things private, together with the politicization of environmental and climate issues, could explain why although they love nature, they do not see environmental or climate action as their responsibility and therefore do not actively engage in such action.

The general picture of the state and protection of the environment in communist Czechoslovakia is alarming.[3] Although some regions of the Czech lands were described as a *moonland in the 1980s,*[4] Pavlínek and Pickles point out that this picture is partially informed and shaped by what they call *myths:* "the myth of 'ecocide', 'toxic nightmare' and 'ecological disaster' [...], myths about the almost total ignorance of environmental problems by state socialist governments, and myths of state socialist environmental problems as being completely different from the situation and environmental challenges of Western capitalisms".[5]

In fact, these would constitute simplifying shortcuts that would prevent us from grasping the reality of the connection between the environment, the state economy and citizenship in the Communist era, laying the foundations for the current situation.

The socialist state introduced environmental legislation from the 1950s and 1960s in response to the first signs of environmental degradation, e.g., forest defoliation in northern and north-

western Bohemia.[6] This legislation, however, was largely subordinate to the state's economic interests.[7] Although it was strictly formulated, it was weakly enforced and characterized by negligible environmental investments.[8] However, a number of mainly end-of-pipe policies seem to have contributed to a turning point regarding key pollutants and the beginning of their reduction, even before the fall of the regime in 1989.[9]

Also, there was no lack of conservation organizations in the former Czechoslovakia. In 1958, Yew (Tis), an organization interested in nature conservation and education, was founded. In 1969, in a period of political openness during the Prague Spring, it even gained independence from the state.[10] In the period of "normalization", the organization was disbanded due to its tendency to harbor members of banned groups (Boy Scouts, Woodcraft, etc.). It was replaced by an official state-formed organization emphasizing 'small ecology', i.e., nature conservation and volunteering, protecting and relocating plant and animal species in large building projects, cleaning water streams and natural sites, etc.[11] The state viewed "small ecology" as apolitical and harmless and civic engagement in the organizations that were pursuing it was encouraged.[12] These were popular organizations with quite high levels of membership, but they were tied to the state and therefore did not challenge it.

The state of the environment in Czechoslovakia and the accompanying strategic and political decision-making about the state of the environment, that is, "big ecology", was a state secret with environmental data treated as top secret information. Rarely did any organization have access to environmental data, as it could have been used to criticize the state. One notable exception was the Ecological Section of the Biological Society of the Czechoslovak Academy of Sciences, which leaked a report on the state of the environment in Czechoslovakia, leading to its publication in the Western press in 1984.[13] Deforestation and air pollution from power plants and chemical factories, particularly in North Bohemia, were felt and perceived directly by its inhabitants from the early 1960s (see below), yet it took another 20 years for the environmental situation to deteriorate before the political, economic and social conditions allowed the citizens to go out on the streets in brave acts of resistance.

Picture 1. Destruction of large areas of mountain forests in the Polish-German-Czech borderland region.

PHOTO: LOVECZ/ WIKIMEDIA COMMONS

The environmental crisis that manifested particularly strongly in the North Bohemian region peaked during the 1970s and 1980s. The increasing emphasis on economic growth and competition with Western capitalism during a period of economic stagnation increased the pressure to industrialize the region, which effectively became a sacrifice zone during the 1970s and 1980s.[14] This was a striking symptom of the economic crisis of the socialist economy. The region was very industrialized, heavily relying on the extraction and burning of low-quality brown coal (lignite), which contains a high sulfur and ash content. With brown coal power plants concentrated in the same region, pollution levels were at a peak in the CEE countries[15] and the area became a "virtual wasteland".[16] Acid rain, a direct result of the high emission of sulfur dioxide and nitrogen oxide, devastated large areas of mountain forests in the Polish-German-Czech borderland region (see Picture 1). Inhabitants of more than 100 villages and communities were relocated into newly built concrete housing estates in order to allow coal to be extracted.[17] The incidences of allergies, immune deficiencies and respiratory diseases in children, as well as the number of birth defects, started rising during the 1960s and even increased into the 1970s as a result of high levels of air pollution. Life expectancy in the region was up to ten years lower than in

> The socialist state introduced environmental legislation from the 1950s and 1960s in response to the first signs of environmental degradation.

Picture 2. Jezeří Chateau above the Czechoslovak Army Mine in Mostecko.

PHOTO: KIVAK/ WIKIMEDIA COMMONS

other developed European countries.[18] These problems, together with the damage to the natural landscape as a result of massive deforestation and surface mining (see Picture 1 and 2[19]) in the region, were highly visible to the population by the 1970s and 1980s and local inhabitants feared for their own health, as well as the health of their loved ones.[20]

The continuing environmental and public health degradation put the socialist state in a difficult position. Attempts to mitigate or alleviate the increasing concerns and fears of the population by promising future environmental regulation was a tacit admission of guilt that the state, which controlled and planned the state economy, could not deflect (unlike in the capitalist economy, where companies and the state could blame each other).[21] This increased the level of tension and created an opportunity for civil engagement – environmental threats, resulting from the political decisions of the state, intertwined with political threats to the state.

The overall political and social climate that led to the Velvet Revolution was highly influenced by the ongoing environmental crisis. 1989 saw the emergence of several independent environmental groups that directly opposed the state's poor response to the environmental crisis. Children of the Earth (*Děti Země)* and the Rainbow Movement *(Hnutí Duha)* were established and later became key actors in the Czech environmental movement in the 1990s and 2000s. The Prague Mothers movement *(Pražské matky)* organized civil protests in Prague in 1989 highlighting public concerns about the impact of persistent smog on their children's health. Several public protests focusing on the smog issue were organized in North Bohemia two weeks before the student demonstrations of November 17, 1989, in Prague.[22]

Thus, environmental concerns played a key role in the Velvet Revolution and were among the most important political issues as Czechoslovakia entered the first stage of the long transition into a democratic state and free-market economy. In response to the situation in North Bohemia, the government-imposed coal mining limits in 1991 to guarantee that mining and the associated environmental degradation, resettlement of inhabitants and the destruction of infrastructure would not continue into the future. The Green Party had already been established during the Velvet Revolution. Existing and emerging non-governmental environmental organizations were invited to the "Green Parliament" and to participate in environmental policy making. The general political sentiment of the time was one of democratic collaboration and partnership between the state and environmental organizations.

However, this sentiment did not last long.[23] In 1992, Václav Klaus, leader of the Civic Democratic Party (CDP; *Občanská demokratická strana)*, won the election and became Prime Minister of Czechoslovakia. The primary interest was in economic transformation and privatization of the state-owned and state-controlled economy. Interest in environmental concerns by the new government was negligible. The young Green Party was not politically successful during the 1990s (although it had some representatives in both chambers) and exerted only minimal influence on government policies of the time. The adoption of environmental policies was mainly driven by the need to meet the minimum environmental requirements of the EU and demonstrate that the Czech Republic was ready to collaborate with Western organizations.[24]

The overall transformation of the Czech economy, which has shifted from heavy industry, has led to significant improvements in a number of environmental indicators, although this was partially due to the economic slowdown.[25] Czech households were becoming increasingly energy-efficient, mainly due to changes in sources of heat (mostly from coal to gas), although at the same time, the number of cars continued to steadily increase.[26] New economic and social problems emerged, such as a decline in GDP and rising unemployment[27] which, in turn, focused the political and public gaze on the economic dimension of the transition. Fagin and Jehlička[28] even go as far as stating that the relationship of the government at that time to the idea of sustainable development was one of "fierce hostility". According to the authors, it extended "as far as rejecting any references to the term [*sustainable development*] within the official 'State Environmental Policy' [MZP, 1995]. The document characterizes the state environmental policy as '[a] dynamic approach leading to finding ecologically, economically, socially, and politically optimal variants, not as a static dogma undermining economic development and resulting in state dirigisme' [MZP, 1995: vi–vii]."[29] This strong economic liberalist approach to environmental protection was especially (but not only) promoted by Václav Klaus from the 1990s onwards. He later became Czech president and continued to promote this approach, as well as climate change skepticism.

Built on the socialist legacy, an attitude took root in the Czech political culture that regarded sustainable development, green growth or green politics as being dogmatic and ideologically (and generally heavily left-oriented) composed, therefore threatening liberal democracy. This also strongly affected the Czech environmental movement. In 1995, four of the most prominent Czech environmental organizations were listed by the secret services as extremist organizations that threatened democracy and public order.[30] From this point on, the relationship between Czech environmental organizations and the state was based on suspicion and distrust. Initially regarded as a threat to the socialist state by calling for the democratization of environmental protection measures, these environmental organizations were now considered to be threating the democratic order. The essence of the attack, however, was the same. What was actually perceived as being threatened during both time periods was the economic interests and economic growth pursued by the political elites. Although the

From this point on, the relationship between Czech environmental organizations and the state was based on suspicion and distrust.

blatant 1995 attack caused public uproar that led to the removal of the four organizations from the list at the time, it is important to note that the "ecoterrorists" label is still used by both Czech political elites and the media to portray environmental protests as running counter to the common interest of the public. As a consequence, Czech environmental NGOs increasingly deradicalized and opted to address less confrontational issues and topics, as well as engage in more moderate rhetoric and communication in order to maintain public and donor goodwill.[31] This was reinforced by the continuing professionalization and normalization of the NGOs as a result of Western funding and the complex blending of imported Western ideas and experiences with those of Czech dissidents and environmental activists, such as an emphasis on the provision of information, scientific rationality (which usually has greater legitimacy in Czech society than emotional appeals) and lifestyle changes, i.e., a more individualistic and private-oriented perspective.[32]

The tense situation began to ease and improve in response to the process of accession of the Czech Republic to the EU during the late 1990s and with the actual accession in 2004. This opened new avenues and opportunities for environmental organizations and activists to participate in the policy-making process, resulting in their increased recognition and legitimacy.[33]

Nevertheless, throughout the 2000s, environmental issues were never at the top of the political agenda, despite the Green Party achieving some political success since 1996, which included participation in the government from 2007 to 2009. However, it never had broad electoral support. Interestingly, the party was ideologically positioned to the right of center, in contrast to most green parties in Europe, which usually take a more left-oriented position. Such orientation was partially the cause of its electoral success, rather than any prioritization of environmental issues.[34] New parties with a similar pro-European orientation entered the political landscape before the next elections, and the Greens lost their support and never regained it. The Green Party has some municipal representatives but has had no political presence on a national level for some time now. No other political party prioritizes environmental issues on its political agenda.

Thus, it was compliance with EU environmental requirements, standards and policies that motivated the Czech political elite to implement environmental policies, rather than a nationally based interest to protect the country's natural environment. With no strong and clear environmental goals and a consistent approach, the legislation has frequently changed and there has been a lack of policy predictability and stability. The resulting environmental policy mix was deemed weak and ineffective.[35] Some of the key policies, for example, the state subsidies for biofuels and solar energy implemented in the 2000s, were not properly prepared or implemented. This resulted in major controversies and corruption scandals that received heavy media coverage.[36]

Although the Czech Republic has made progress in decoupling economic growth from GHG and other pollutant emissions[37], its economy depends on industry and its energy production relies on coal, gas and nuclear power (29%, 18% and 19% of the total energy supply in 2021[38]), including profitable electricity exports (the Czech Republic has been a net exporter of electricity for decades – in 2007 net exports were 16 TWh and in 2021 they stood at 11 TWh; the main production sources are coal – 38.6 TWh in 2021 – and nuclear power – 30.7 TWh in 2021). In the 2000s, the government encouraged investment in automobile production and machinery, which at the time was being pursued as a national interest. As a consequence, the country is one of the best manufacturing destinations in both Europe and globally[39] and its focus on industry and manufacturing is well established. This has naturally led to high energy intensity and higher levels of air pollution.[40]

Although restrictions on the extraction of lignite in North Bohemia were clearly established in 1991, breaking these restrictions was a widely discussed topic, especially between 2004 and 2015.[41] The informal pro-coal coalition that supported an extension of the restrictions not only

> Czech environmental NGOs increasingly deradicalized and opted to address less confrontational issues and topics.

included coal mining companies and miners' trade unions, but also the state-owned energy company, many politicians, ministries, and the country's president (Miloš Zeman).[42] The main pro-coal arguments included energy security (having a national energy source, still not easy to replace with renewable sources), employment, as well as national economic interests (state profits from taxes and exports and low energy prices for consumers).[43] And finally, another Czech president, Václav Klaus (president from 2003 to 2013), was an ardent supporter of climate skepticism during his term in office. He had criticized ecological organizations and used political pressure to implement climate policies based on a very strong liberal position that emphasized the perceived threat to individual liberties.[44] Thus, climate skepticism and severe criticism of environmental organizations were present at the highest political levels.

In such a political and economic setting, which prioritized economic growth through a reliance on manufacturing and fossil fuels, and with climate skepticism ingrained in Czech political culture, environmental and climate change policies were very often perceived as running counter to the national interest. This often manifested in the Czech Republic's position toward the EU's climate goals and policies. For example, the Czech Republic was one of four member states (together with Poland, Estonia and Hungary) to originally oppose the EU's 2050 climate neutrality target during the 2019 summits.[45] The country also planned to rely on nuclear power in order to reduce its GHG emissions, entering into negotiations to include nuclear power as a green source in the debates on the 2030 climate goal in 2020.[46]

Moreover, EU-level debates about climate policies are often presented in a very confrontational manner by many politicians, including those politicians who are not generally Eurosceptic. For example, the then Prime Minister Andrej Babiš commented on the debate about banning the sale of fossil fuel vehicles: "We will not agree with the ban on selling fossil-fuel cars. It is not possible. We can't dictate here what green fanatics devised in the European Parliament." This kind of language ("fanatics", "ecoterrorists", "environmental anarchists") and neoliberal argumentation was adopted by several politicians and the Green Deal was attacked from multiple positions, including the Deal not being a priority during the pandemic and the war in Ukraine.[47]

Czechs are oriented toward food self-provisioning.
PHOTO: PAVEL HRDLIČKA

Such a lack of political will, or even a straightforward refusal, to prioritize environmental issues and policies justified by the perceived opposition to environmental policy and economic interests obviously have a strong tradition in Czech political culture. With a strong presence in the Communist era, it has survived (and even thrived during) the transition period to the present day. The grounds of the argument may have changed: from the need to keep pace with Western economic growth and development during the Communist era, through neoliberalism as an ideological driving force of the transformation process,[48] to a more populist rhetoric of the last Czech government, which targeted citizens' living standards and security issues. However, the overall pattern is very similar. Environmental issues, from "big ecology" in the Communist era to climate change in the current European policy debates, have been heavily politicized in the Czech Republic. In the Communist era, environmental issues were a dangerous reason for criticizing and opposing the regime that caused them. In the transition period that was led by a neoliberal government, they were challenging the neoliberal ideas of

economy and individual liberties. These days, debates about climate policy are strongly associated with the negotiation of national interests and position in the European Union, as well as Euroscepticism.[49]

On the other hand, *nature* is not political. Nature is something outside our doorstep, something we can relate to personally, something that can be experienced in private without making a political statement. As mentioned at the beginning of this text, Czech people are very concerned about nature, have a very positive relationship to it, and tend to spend a lot of time in it. They perceive themselves as nature conservationists (71%) and ecologists (48%) and Czech opinion polls indicate that nature and environmental protection should take precedence over economic interests.[50] On the other hand, in 2016, around half of Czech adults did not think about climate change much (53%) while more than half of them (60%) did not feel personal responsibility for tackling climate change.[51] Furthermore, 44% of Czech adults were not concerned about climate change and 33% of them were only slightly concerned. Thus, Czechs demonstrate that they are more concerned about protecting nature than other Europeans, while also demonstrating less concern about climate change.[52] In general, Czech people are more concerned about environmental problems that are easier to perceive, such as the accumulation of waste, pollution, lack of drinking water and loss of rainforests.[53] However, nature is also relatable in the private domain, a domain that Czechs strongly prefer to the public domain.

> Rather than political engagement or activism, people keep to themselves and mainly pursue their private interests.

Like the citizens of most post-socialist countries, Czechs are not as politically active as their Western European counterparts.[54] Only a minority of Czech citizens have reported participating in a demonstration (14%) and being involved in a local association, NGO or political party (16%).[55] Regarding public engagement in climate change, only 10% of them have reported making a financial contribution to climate protection and only 9% have reported signing a petition.[56] The orientation of Czechs toward the private sphere is related to their historical experience of deterioration in the public sphere during the Communist era and of the regime systematically undermining trust in both the public sphere and public interests.[57] This sense of distrust toward the public sphere and active participation in it as something specious and opportunistic continued during the transition period, during which time the public sphere was not rehabilitated. Some representatives of the political elites (including Czech president Miloš Zeman) and the media openly attacked key actors in the public sphere, journalists, and non-governmental organizations.[58]

As a consequence, Czechs do not generally trust public figures and actors, with the sole exception of scientists, who are trusted by 63% of adults. This is followed by ecological organizations and NGOs, which are trusted by almost one third of citizens, although they are distrusted by more than 40% of citizens (and only 9% of adults trust politicians).[59] In 2005, Fagan[60] argued that "what exists today are NGOs without civil society". As we have already seen in this text, environmental NGOs made it through the transition relatively deradicalized and depoliticized, partially due to their struggle to maintain legitimacy and citizens' trust in an aggressive political environment and in a society that was rather suspicious of anything public.

Thus, rather than political engagement or activism, people keep to themselves and mainly pursue their private interests. In the Communist era, the private sphere was safe from political repression and people became increasingly self-reliant and resourceful in an age of frequent shortages of goods. Czechs are renowned cottages' owners, mushroom pickers, do-it-yourself handymen and gardeners oriented toward food self-provisioning.[61] These are not mere remnants from the Communist era, but the ongoing cultivation of the private sphere. Moreover, private activities are not usually motivated by environmental concerns, including self-food-provisioning.[62] It is worth mentioning that self-provisioning is typical for people who have gardens in their place of residence. Holiday homes for weekend recreation are usually located close to forests, rivers, and protected areas. Soil contamination is less of an issue in residential and holiday home areas.

Only recently, concerns have been raised in the Czech Republic about soil erosion and depletion as a result of industrial farming that is still conducted as it was in the socialist days.

Almost 90% of Czechs claim to reduce their water and energy consumption at least sometimes, more than 60% frequently[63], although their motivation, like with food self-provisioning, is not usually environmental, but rather economic – trying to save money. Similarly, adaptations to heat and drought often emerge without any connection to climate change perception and knowledge.[64] Thus far, climate change has not interfered with people's private lives and, as a political issue, belongs to the public sphere and is therefore somebody else's responsibility. Czechs tend to ascribe responsibility for tackling climate change and environmental issues in general to the state, the EU and industry, rather than to themselves personally[65], which is in line with the politicization of these issues.

To summarize, Czechs favor nature conservation, what the Communist regime saw as "small ecology", while they tend to assign responsibility for "big ecology" issues to both the state and the EU. This is partially due to their historical experience of responses to environmental issues during the Communist era and the transition period, and partially due to the overall orientation of the Czech public to the private sphere, in which nature, unlike climate change, is present and experienced on a daily basis. At the same time, the political elites of the Czech Republic are reluctant to pursue more ambitious environmental and climate change goals and policies, while the public exerts little pressure although, overall, it claims that environmental protection should be prioritized.

The ongoing war in Ukraine significantly increased the pressure on energy supply and energy security, with energy prices increasing. On the one hand, this could once again lead to the prioritization of economic interests over environmental concerns by the political elites. On the other hand, for once, economic interests could be aligned with environmental interests, for example, in the diversification and increased self-sufficiency of the energy supply through a higher proportion of renewable sources. In the Czech Republic, the war and the ensuing energy crisis will likely overshadow environmental concerns and could be used as an excuse to not pursue more ambitious environmental goals, or even to dampen the European environmental policy, which is the main driver of the implementation of environmental policies in the Czech Republic. Thus far, the present government is much less opposed to the EU's climate strategies and is adopting new and relevant policies. A change in the political discourse about climate change and the environment would indeed be beneficial, not only for the sake of the effectiveness of Czech environmental policy and for the environment, but also for the way in which the public relates to these issues. At the same time, younger people are generally more climate aware and attach greater importance to environmental issues. They also tend to support climate action and protests more and are slightly more inclined to participate themselves. Such participation also increases with personal experiences of climate change impacts, such as droughts. These factors may contribute to increasing activity in the public sphere and strengthening the role of environmental and climate issues as a task for Czech civil society. Private actors, such as companies, are also increasingly contributing to the public debate through the implementation of environmental and climate policies in the business sector. In other words, the coming years may show us whether Czech civil society will either rise to the challenge or remain private. ●

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Estonia

Where First and Second Wave Environmentalism Exist Side-by-side

by **Kadri Tüür**, **Aet Annist** and **Mirjam Rennit**

Over the past decades, Estonia has been in the forefront of societal changes – moving from the position of a province of the Soviet empire to a state restored to independence with a standard of living and civil society that are well comparable to the states of the "old West". What has happened to environment, and to local people's attitudes towards it, over the course of these years? The present article brings together three Estonian scholars of environmental humanities from the disciplinary background of semiotics, literary studies, anthropology, and ethnology. Our aim is to cast light on some aspects and instances of environmentalism in Estonia in the post-Communist context.

In the following, we make a brief excursion into Estonian environmentalism in the 21st century, taking a closer look at two cases: The writings of popular essayist Valdur Mikita, and the emergence of climate protest movements, most notably Fridays for Future, in Estonia. The theoretical framework used in contextualizing them on the global scale is that outlined by Ramachandra Guha[1] about first- and second-wave environmentalism. In our discussion, we draw on the research carried out in the framework of the project "Estonian Environmentalism in the 20th Century: Ideology, Discourses, Practices"[2] at Tallinn University and on the special issue of the journal Methis[3] where the preliminary results of the project have been recently published. In conclusion, we propose some generalizations that relate the phenomena described to our post-communist past, highlighting some possibly diverging aspects of Eastern and Western environmentalism.

First and Second Wave

Ramachandra Guha, characterized as "a sociologist by training, an environmental historian by instinct, a journalist, opinion maker, and sports

Lahemaa National Park, Estonia. Established in 1971 it was the first national park in the whole former USSR.

PHOTO: WIKIMEDIA COMMONS

write",[4] in his seminal book *Environmentalism. A Global History*, has distinguished between two waves[5] of environmentalism that we also use as a heuristic device to conceptualize the current state of environmentalism in Estonia. Guha provides the definition of environmentalism as follows:

> **I argue that environmentalism must be viewed as a social program, a charter of action which seeks to protect cherished habitats, protest against their degradation, and prescribe less destructive technologies and lifestyles.**[6]

The first wave of environmentalism, according to Guha, was initiated by the industrial revolution and advances in medicine that led to a steady growth of the human population. The industrial revolution had its impact on the natural world through new developments in resource extraction, production, and transportation. This generated a predominantly intellectual response to these processes in three major variations: Back-to-the land sentiment; scientific nature conservation, and the idea of wilderness together with its artistic representations. Cities were regarded as ecologically and morally corrupt environments which it was righteous to abandon in favor of a peaceful rural life. Local life, based on small-scale production and consumption cycles, was praised in writing, art, and music. The second variety of first-wave environmentalism found its output in scientific nature protection that took local concerns to a national level. Establishing nature protection areas as enclaves where human activities had to be limited or ceased relates it to the third variety of first-wave environmentalism, namely, the artistic and scientific elaboration on the notion of wilderness, or so-called untouched nature. It was artistically constructed in

landscape paintings and rhetorically in nature writing. However, as Guha points out, the idea of wilderness that was physically manifested in establishing national parks and "monuments of nature" addressed only the natural environment but ignored the (non-white) human dwellers therein. First wave environmentalism is based on a clear distinction between human (read: Western) culture and nature. These ideas are juxtaposed, and "pure" nature is played out against the "corrupt" urban, industrial civilization. Let us have this in mind in the discussion below on Valdur Mikita, the most prominent contemporary Estonian nature essayist.

The second wave of environmentalism as Guha proposes began around the 1960s. This wave is characterized by the rise of environmentalism as a social movement, manifested in public action and grassroots movements. The three major varieties of the second wave that Guha discusses are professionalization, environmentalism of the poor, and ecofeminism. As nature protection institutionalized, it also became more routinized and professional. National parks globally hired rangers and developed administrations; states implemented governmental bodies responsible for the protection of nature, the procedures and principles of nature protection became formalized as laws. Guha presents the development of the German Green movement into an influential political party as an example of such professionalization.

In Estonia, the first national park in the whole former USSR, Lahemaa, was established in 1971. Institutional nature protection in post-war Estonia had started considerably earlier, bridging the gap with the respective earlier activities (e.g. Nature Protection Committee of the Estonian Academy of Sciences, 1955; Nature Protection Act and (re-)establishment of four wilderness sanctuaries, 1957; a course on nature protection officially included in the curriculum of the University of Tartu, 1958). The development of grassroots environmental activism into institutional forms in Soviet Estonia can be traced back to 1958 when the first student society for nature protection in the whole Soviet Union was established in Tartu. The journal Eesti Loodus [Estonian Nature] was launched in the same year. In 1966, the Estonian Society for Nature Protection was established, which became one of the major mass organizations in Estonian SSR.[7]

After re-gaining independence, a remarkable number of NGOs with an environmental agenda were established in Estonia; one of their common goals has been to influence governmental attitudes towards more environmental concern.

The environmentalism of the poor is a notion that stems from the writings of Peruvian activist Hugo Blanco.[8] Guha points out that there are numerous examples of grassroots environmentalism where environmental concerns are combined with issues of social justice. People on the lower rungs of the social ladder are more vulnerable to exposure to problems related to environmental degradation and have fewer possibilities to move away from inconvenient situations, leaving them generally more vulnerable to unfavorable environmental conditions, and with fewer tools to respond to the situation. Protests, demonstrations, but also direct action, such as planting trees, are among the repertoire of the environmentalism of the poor. American ecocritic Rob Nixon has combined this with the notion of "slow violence". He writes:

> **By slow violence I mean a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all.**[9]

This might be, for example, environmental degradation induced by industrial resource extraction that results in the collapse of the surrounding ecosystems, leaving them uninhabitable over decades, or nuclear waste that seeps into human cells and affects not only the mothers, but also their babies to be born years after the initial contamination. The slow violence directed towards the local population was also very much present during the Soviet occupation of Estonia, especially in mining areas where the

People on the lower rungs of the social ladder are more vulnerable to exposure to problems related to environmental degradation.

The band Naised köögis [Women in the Kitchen] as an example of Estonian ecofeminism.
PHOTO: PRESSIMATERJALID

degradation of ground water and air quality was largely ignored by officials.[10] Estonian writer Maarja Pärtna has eloquently described this in her most recent collection of prose poems, Elav linn [Living city].[11]

That example brings us to the third variety of second-wave environmentalism proposed by Guha in 2000, namely ecofeminism. However advanced or stagnant a given society, care for the younger generations still lies mainly on women, he argues. A recent example of Estonian ecofeminism in artistic form is a song What world will be left us?[12] by an all-mothers' band Naised köögis [Women in the kitchen]. The song expresses their concern about the environment that is going to be left for their children's generation as a result of the perilous natural resource management.[13]

In the following, we first offer a general characterization of Estonian environmentalism and its academic study, followed by discussion of two examples from Estonian first- and second-wave environmentalism respectively.

Environmental Activism – A Modern Western Phenomenon?

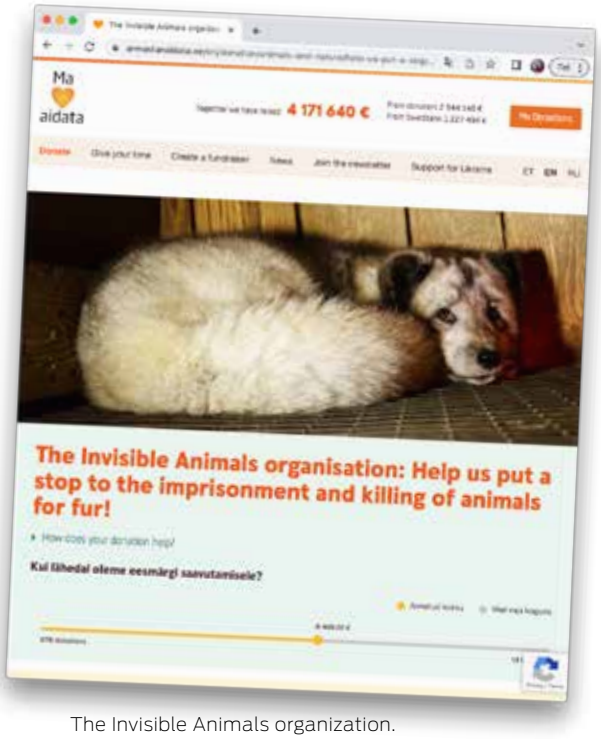
Environmental activism has considerably increased over the last couple of years in Estonia as well as globally. Some regions and eras seem to have been less able than others to contribute to activating people around the protection of the environment.

We need to search for lenses that enable us to see and understand better the expressions of environmental activism in seemingly silent, unsupportive times and spaces. As we recognize the moment humans' relationship with their living space changed to the degree that society was conceptualized separately from what is now called "nature" or "environment" to be the beginning of a problematic relationship, we also need to recognize that we have restricted our temporal and spatial lenses in our search for the concern for such a relationship. Environmental activism tends to be seen as a modern phenomenon, to be found only in eras and locations where the nature-culture separation is driven by modern comforts and security. Furthermore, we tend to assume its presence in regions that respect citizens' and individuals' rights enough to make their presence on public arena possible.

And yet environmental activism can take very diverse forms across different historic periods, and be found in a wide array of locations. Fur-

> The present-day movements are often active primarily in the social media.

thermore, approaching ecologism/nativism and environmentalism very broadly allows valuable comparisons between past and present environmentalisms. There might be a clear difference between the responses to environmental concerns in the 17th and 21st century, yet allowing for a detailed historical approach as we cross disciplines, it offers pointers which enable us to find the similarities between the two eras and their environmentalisms, revealing common features of the basis of this concerned relationship.



The Invisible Animals organization.

Catastrophes, dangers, and natural disasters reflect our social relations and our relations with the surrounding world. They constitute a kind of revealing crises[14] or natural laboratories[15] that make evident the contradictions hidden in societal relations, as well as our basic needs and basic relations. They also trigger actions to slow down or stop the deterioration of conditions in our environment, and do that independently of the complex webs of attributing causes and finding culprits. These similarities become evident, for example, as we compare climate-related revolts in the 17th century with climate protests of the 21st century.[16] In both cases, environmental and climate processes are revealed to have agency and to be holistic phenomena that are strongly related to human activities. Whether and how such actions can emerge with enough force to change the society, and whether they can evolve into an environmental movement, depends on how the environmental problem and societal mechanisms are recognized as co-dependent. Even a single revolt or riot indicates a conviction that such a connection exists and that it is possible to demand changes in the name of the environment. However, if such changes and their potential are not systematically reflected on, those who participated in a single protest might not necessarily come together again for the same aims and the protests might not work as extraordinary events capable of expanding and continuing.[17]

Environmental activism of the early 20th century, particularly its animal protection aspects, find parallels in the veganism and rebellions against the exploitation of animals in the 21st century. Such movements continue and expand in an increasingly all-encompassing way – the empathic root of the movements of both eras lies in the basic biophilia of humans as a species, in cross-species empathy and in humans' symbiotic evolution[18] or even in their co-creative nature.[19] When in the 1920s and 1930s, animal protection movement developed around the early recognition of this shared nature, it responded to the visible daily and overt cruelty with which animals, particularly horses still in practical use in urban environments, were treated. The conspicuousness of such malice created an army of witnesses who were increasingly sensitive towards such a treatment due to the attention of the animal protection movement. Furthermore, this change was also part of a larger process which aimed to "save the animals and cure people", as Hein[20] cites one of the central figures of this movement in Estonia. Even more importantly, teaching such attitudes meant teaching that all life is sacred. The Estonian organization Invisible Animals strives to protect agricultural animals, their name referring to one of the main obstacles to their task.

Vegans' silent or even clearly voiced request to have a right not to contribute to the carnage of animals confronts the hidden violence of modern productive systems that is concealed from the consumers. The present-day movements are often active primarily in the social media; they are much more colorful and diverse than a hundred years ago, and sometimes even hostile to each other. Nevertheless, they all move towards helping humans recognize their harmonious belonging to the environment and their being "biosocial becomings".[21]

Temporal comparisons also alert us to differences in political and economic contexts which could be expected to temper or prevent environmental activism. Can it even occur in an authoritarian or otherwise politically overpowering era, often hostile to activism? Finding answers to this contributes to understanding the activism and awareness in silences and seeming lack of association. How can people's voices be heard when their freedom of speech is curtailed? Victor Pál[22] has analyzed the repeated conviction in research that there was little if any socialist era environmental activism. He suggests it reflects capitalist (over)confidence in the freedoms it claims to grant. Similarly, post-socialist regions are still blinded by the zombie of socialism[23] which confuses the picture on the possibility of activism, awareness and overcoming restrictions. Our analysis allows us to rid ourselves of this earsplitting silence – we can find the basis for how the citizens remained knowledgeable and alert even in such circumstances. Activism lived in art, in literature, and in experts' continuing right to express their professional opinion.[24] It is for exactly these reasons that by 1980s, the supposedly suppressed, uninformed and isolated Soviet citizens were already so active that they participated in various citizen science initiatives, taking regular daytrips together to the hotspots of environmental harm or degradation and eventually, came out in such protests against the system planning to initiate mining activities that these had to cease, and the empire crumbled. Of course, such activism was effectively married to nationalist movements.

Art and literature have influenced awareness and activism in liberal societies too – in particular, the current climate and environmental movements have a deep and strong connection to art and literature, even reaching the streets together, for example in the form of protest art and shows created by writers, graphic designers and performance artists.

Whilst Estonian art is looking 21st century environmental problems squarely in the face, the role of the creative industry and artists is relatively unnoticeable in protests. But so are the protests – in the country that became free in a wave of environmental protests. It is as if Estonian environmentalism has become restrained rather than empowered since the 1990s, confirming Pál's suggestion that liberal democracies are not markedly more enabling for environmental movements than the infertile conditions of late socialism with its environmental awareness and the resulting actions. Add to that the more recent ugly conflicts, ridicule and lack of constructive critique that have emerged in Estonia in various clashes between capitalist processes and environmental protection, and the hopelessness of environmental causes where activists have to face down not a state in its final death throes, but a hugely powerful business lobby amidst massive global environmental destruction and climate change – and the reality seems more bleak now than ever.

Of course, nationalist arguments which have worked before, from the phosphorite war to protecting sacred woods, do not necessarily appeal in the 21st century to potential, perhaps younger activists, who might be more concerned about global problems and might not get as worked up about ethnic issues. It is interesting to note at the same time that activists who emerged during the COVID pandemic and protested against various state restrictions and against vaccinations[25] partly overlapped with more environmentally oriented people, some of whom moved to the rural regions during the pandemic period. The polarizing effects of such protests have prevented rather than helped rallying around environmental issues.

It is as if Estonian environmentalism has become restrained rather than empowered since the 1990s.

Valdur Mikita at the opening of Prima Vista 2015.
PHOTO: WIKIMEDIA COMMONS

In a society where the health of social unity is relatively poor, we may assume that coming together happens at best locally, in accordance to the increased awareness of some, as they desire to have an impact on a particular issue. More general, more global themes within which most local problems fit would not be able to unite masses that struggle to make ends meet. Even those dedicated to the consequences of climate crisis – those who have mostly lost hope – still think locally of Estonia as a relatively well positioned region within a climate-changed future, but also see it as the inevitable target or at least transit country for the inevitably increasing numbers of climate refugees. Nevertheless, the number of people recognizing environmental and climate issues is notable,[26] but they find each other more quietly, away from the public gaze and even researchers' attention.

Environmentalism for sure is not a failed historic phenomenon with its long roots and multiple connections.[27] Environmental activism is one of the most lasting and effective ways to increase public awareness on environmental issues.[28] Studying it allows us to recognize that this is not a modern, recently invented phenomenon invading the minds of people in European peripheries. It might be more likely the human biophilic nature, lasting across times and eras, and across political and economic formations, even if some of those may have a considerable effect in suppressing its expressions.

First Wave: Valdur Mikita

One of the important realms for an "alternative" environmentalism is art. Estonian art historian Linda Kaljundi has recently eloquently demonstrated how environmental concerns were foregrounded in the works of a number of painters during the Soviet period when criticism of the Soviet colonialist take towards natural resources located in its member states could not be openly expressed. The same is true about literature. The attention of general public can well be drawn to environmental problems, such as pollution, over-exploitation of resources, environmental degradation, or even the damage that is done to land and local people by damming rivers for hydroelectricity, by means of written texts. Those do not necessarily have

to be problem articles in newspapers; they can be feature stories, nature essays, or outright fiction/poetry.

One of the most remarkable creative writers on Estonian environmentalism in this regard is Valdur Mikita (1970). His educational background is in biology, and he earned his doctoral degree in semiotics. Mikita observes that the modern-day Estonian is gifted at combining indigenous folk knowledge and the newest technological inventions.[29]

Mikita debuted with collections of experimental prose and poetry in the very first years of the 21st century. Since 2008, he has steadily published essay books that revolve around questions of language, identity, and place-relatedness. There have been several attempts to figure out the general or main meaning of Mikita's texts,[30] looking at them through the prisms of myth, the Fenno-Ugric way of life, or the notion of wilderness. It is indeed difficult to construct, even theoretically, some leading lines of thought in the works of such a prolific writer. Kaljundi has pointed out that the leitmotif of Mikita's texts is place-centeredness; the so-called national character emerges only in relation to the natural environment.[31]

In the following, we present some of Mikita's ideas about the special qualities of forests as opposed to modern city environments; these might reveal the general underlying sentiment in his creation of the natural environment that he claims to be ur-Estonian/Finno-Ugric.

In *Kukeseene kuulamise kunst* [The art of listening to a chanterelle], Mikita asks:

> **Are we Estonians forest people? The answer depends on in relation to whom. If we look at animism and nature religion among Europeans, we can fancy ourselves as animists from deep time. But if we compare ourselves to our Siberian kin folk, the Maris, we are just regular civilized urban people.**[32]

Mikita wants us to believe that Estonians' special relation to the forest is an ancient feature that has been preserved until the present day, unlike in most other parts of Europe where people have been urbanized and distanced from immediate contacts with nature, most notably forest. Mikita sees forests as an archetypical natural environment.[33] However, forest is a "semi-domesticated" realm for Mikita; he emphasizes the emotional attachment of local people to certain patches of forest that are regarded as part of one's home and one's identity.

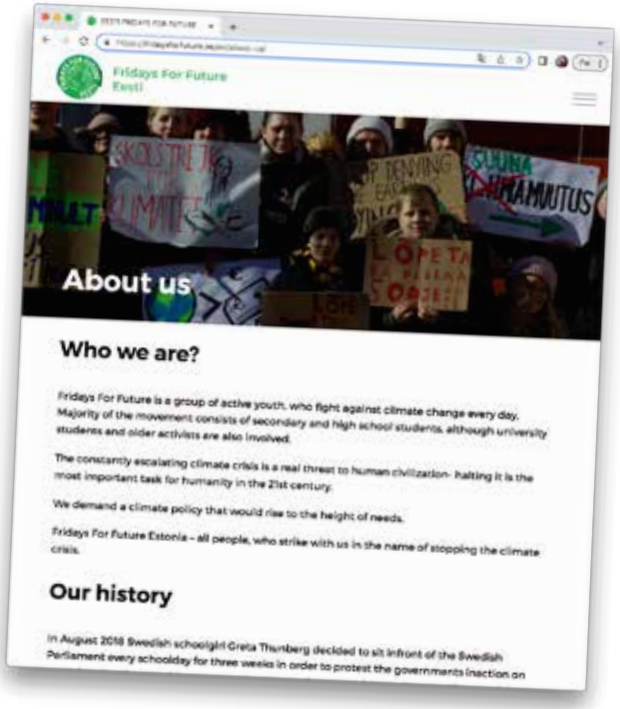
In Mikita's books, forest is constructed as a pastoral environment that enables one to distance oneself from human contacts and provides a possibility to exercise a simple, idyllic lifestyle close to nature and its natural cycles of daytimes, seasons, and other cycles related to sun and moon. Human connection to the forest environment is intimate and bodily, involving movement that is initiated either by means of mushrooming, jogging, cycling, or just "dancing to the patterns of bark beetles".[34] Being in the forest may also involve hard physical labor, such as making firewood, but it is purposeful and meaningful work in the sense of Sigmund Kvaløy – its results are needed for immediate survival and well-being (such as heating a sauna, for example). This indicates the sentiment of first-wave environmentalism: production needs to be local; transport chains must be short; life far from cities, preferably in the wilderness, is valued as the goal towards which all humans should strive.

Another feature of Mikita's texts that is relevant to this discussion is his juxtaposition of urban and forest environments. Characteristic of first-wave environmentalism, as well as of the pastoral take on life in literature, is that the urban environment is considered wrong, morally corrupt (and corrupting), and the natural environment is regarded as offering a most welcome retreat from city life. Mikita writes that there are three main environments that modern humans encounter:

- indoors: secure, but offering limited stimuli
- urban space: overflow of stimuli, many false signals, stress to nervous system
- forest: balanced environment, no false signals, alertness of senses comes naturally.[35]

Mikita wants us to believe that Estonians' special relation to the forest is an ancient feature that has been preserved until the present day.

He specifies that in forest environment not only vision but all the other senses, including haptic orientation, need to be at work, thus providing the human body, brain and mind a far more complex exercise than can be achieved in a uniform city environment with its paved paths, lamp posts at a standard distance from each other, and road systems that leave very little space for improvising one's track from one edge of the city to the other. Mikita is especially concerned about children: "A modern-day child acquires information about the surrounding world primarily through seeing and hearing – senses that are clearly overburdened, at the same time as the "old brain" (i.e. smell, taste, and touch) is nearly switched off." He argues that depriving children of direct contact with the forest environment, as is usual in the case of urban people, results in a worse quality of life. When the only contact with nature is provided to children through 2D screens, something essential is irreversibly lost. As much as we might agree with his argumentation, the reality is that it would be very difficult to provide a fully embracing forest experience to every child in Estonia, not to speak of youth on global scale.



Fridays for Future organization.

In conclusion, it can be said that Mikita's forest is constructed as an idyllic and thoroughly positive environment; it is opposed to the urban realm and the latter is regarded as numbing and corrupt. Such a construction of urban – forest binary opposition is characteristic of the first-wave environmentalism as outlined by Guha. Mikita's ideas have a high appeal among Estonian readers of the 21st century. On one hand, it could be a natural continuation of the tradition of Estonian nature writing[36] that is very much place-related and local. On the other hand it draws a lot of its rhetorical appeal from the argument that each person should have an intimate connection to the place s/he inhabits, in order to be able to fully dwell in one's environment. For Mikita, the right places to become related to are located in the forest, not in the cities. This certainly makes his writings appear as an eloquent testimony of the first wave environmentalism. But let us now turn to another example of Estonian 21st century environmentalism that represents the second wave.

Second Wave: Global Issues Within The Estonian Environmental Movement

Inspired by the international Fridays for Future youth climate movement, a local Fridays for Future movement in Estonia emerged in spring 2019.[37] It was part of an unprecedented scale of climate mobilizations around the world that mainly comprised of groups under the international banners of the Extinction Rebellion and Fridays for Future movements.[38] The emergence of the Fridays for Future group and an Extinction Rebellion group in Estonia marked the birth of the climate protest movement in Estonia. Regardless of the long and diverse history of the Estonian environmental movement, the main focus of different groups and organizations has mostly been on protecting the local nature. Protest movements have rather emerged out of various local environmental issues and conflicts such as opposing the mining of phosphorite in the 1980s, protecting sacred natural sites, vernacularly called "hiis", in the 2000s and protesting intensification of forest logging in the 2010s and 2020s. Furthermore,

from the 1920s onwards when ideas about "national nature" first emerged, protecting the local natural environment has oftentimes been associated with or inspired by nationalism and nation-building.[39] As there were previously no protest groups fully dedicated to drawing attention to the global issue of climate change, and as the movement's focus diverges from the rather local topics that have previously dominated Estonian environmental movement, the emergence of climate groups is significant and marks an important shift towards global issues within the Estonian environmental protest movement.

The novelty of the Estonian climate movement is reflected in the background of the FFF movement's participants in summer 2020.[40] As a predominantly youth movement, the group was mostly comprised of young people up to 30 years old. Thus, the fact that the international FFF movement is a youth movement has drawn in and inspired especially the younger generations in Estonia. Although many of the movement's participants had previous awareness about environmental issues acquired in the family, from films or on the Internet, and many had taken individual action like practicing veganism or being acutely aware of problems related to plastic pollution and adopting a zero-waste lifestyle, the majority of FFF participants had never before participated in the (Estonian) environmental movement. Most of the participants had no previous connections with any environmental groups or organizations. Some were already very well aware of the problem of climate change, but many became closely familiarized with it through engaging with the international and local FFF movements. The impulse and inspiration to join the environmental movement, more specifically the climate movement, therefore came from elsewhere, and was not influenced in the first place by local environmental problems.

Most Estonian activists including the founders and leaders of the Estonian FFF movement first came into contact with the global movement on the Internet in the first half of 2019, describing how they saw videos about protests in other countries or listened to speeches by Greta Thunberg, the founder and leader of the global movement. Soon groups formed and first protests took place in Tartu and Tallinn, the biggest cities in Estonia. The movement became quite well known in Estonia, attracted new participants and started organizing their activities strategically on a daily basis. The movement is still very active in 2023. Activists organize both street and digital protests; they also engage with the public by conducting various awareness-raising activities such as sharing information about climate change on their social media channels, writing newspaper articles and doing educational school visits. Since 2020, they have strongly opposed the state's plans to build a new shale oil plant in north-eastern Estonia. The activists have argued that building another fossil fuel plant is incompatible with various international climate agreements such as the 2015 Paris agreement that the state of Estonia has entered, and have sued the decision in Estonian courts on multiple levels, making it the first climate court case in the country.

Many young people have taken the opportunity to act on environmental issues and express their concerns by joining the environmental movement. They are rather globally minded and have not been similarly drawn in by the rather local focus of the diverse national movement described above. Some activists saw their role in foregrounding the issue of climate change for other movements and organizations, pushing them to pay more attention to global issues. Also, and importantly, climate activists have made efforts to draw connections between local and global issues, taking into account the prevalence of local issues in the environmental movement at large, and also recognizing the importance of "materializing" the abstract issue of climate change in the global North where impacts of climate change might not yet be visible and felt.[41] Their aim has been to make the issue of climate change and the movements' message and activities in this relatively little impacted region more relevant and urgent for people. Therefore, they are also very much concerned about various environmental problems in Estonia, such as excessive logging of forests and its negative impact on biodiversity. They draw

"Many young people have taken the opportunity to act on environmental issues and express their concern.

attention to those problems and refer to the interconnectedness of local and global phenomena, for example stressing how the loss of forests and biodiversity reduces the ability to alleviate and cope with the consequences of climate change. FFF has organized protests to specifically draw attention to the issue of unsustainable forest logging in Estonia, and they actively respond to any other local environmental issues under debate at their protests and on the media. Importantly, the continuing operation of the oil shale industry in Estonia, a major pollutant and source of greenhouse gases in the region, has been a central target of criticism for the movement, for enabling a major contribution to climate change in Estonian context.

Conclusion

In his overview of global environmentalism, Guha has challenged the occidental view of environmentalism as predominantly an activist response to the consequences of late industrialization in a capitalist context. Among other examples from non-western countries, Guha briefly discusses grassroots environmental movements from the regions that used to be under the control of the Soviet Union after WWII. He points out the following: "By accident or design, many of the more dangerous factories had been sited outside Russia, in the subordinated republics of Estonia, Armenia, and Latvia. Here environmentalists allied themselves to nationalists, associating the offending factories with a Greater Russian chauvinism, which they accused of craftily exporting polluting units to non-Russian areas."[42] From an insider's perspective, it can be added that in many cases, environmentalists and nationalists did not even have to be allies, because both sentiments lived within one and the same person anyhow. Guha quotes David Cleary:

> **Reality is a seamless web of social and environmental constraints which it makes little sense to atomize into mutually exclusive categories.**[43]

As we have demonstrated above, environmentalism is not a new phenomenon in Estonia. Local people were already concerned about the condition of their natural environment centuries ago. The Soviet period was not an exception in this regard. Under the conditions of censored information exchange, the protest had to find other channels, such as art, literature, and popular activities, for example establishing societies for gardening and bee keeping. However, the Estonian environmentalism has traditionally been very local (to avoid the word parochial) in nature. Local issues and the emphasis on the beauty of nature/wilderness characterize both our nature protection policies and artistic expressions. The same is true about the currently most influential nature essayist Valdur Mikita, whose books celebrating special Estonian/Finno-Ugric forest-relatedness enjoy immense popularity among Estonians.

At the same time, perspectives related to global environmentalism have gradually started to enter the scene, too. There are societies for advancing animal welfare and for foregrounding climate issues; museums organize exhibitions on the topics of the Anthropocene and climate change; nature protection organizations address local issues related to the larger global context – restoration of swamps in the framework of an international initiative being one such example. As our example of second-wave environmentalism shows, movements like Fridays for Future evoke interest in the local youth, but the ad hoc activism is difficult to maintain without further institutionalization. At the same time, formal frameworks and procedures would deprive the movement of much of its anarchistic appeal. At the moment, it appears that first- and second-wave environmentalism exist side by side in Estonian society, and we have to hope that one day they will start to mutually support each other. ●

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Warranted Trust or Over-Trust? The Miracle of Finnish Nuclear Waste Repository Siting

by **Markku Lehtonen** and **Matti Kojo**

Likely to become the world's first countries to solve their high-level nuclear waste problem, Finland and Sweden provide a clear contrast with the post-Soviet Baltic states and their unresolved waste management problems, not to mention the heavy environmental legacy from the Soviet era. The Finnish ONKALO spent fuel repository is projected to start operating in the mid-2020s, most likely several years before the technically almost identical repository project in Sweden, which only received government approval in 2022, and the Cigéo project in the nuclear superpower France, expected to receive the first waste containers in the mid-2030s. The Finnish example is habitually evoked as a best practice model of highly democratic, responsible, consensual and participatory governance, and consistent long-term planning.[1] The trust-based Finnish governance experience also has its downsides, in particular the weakness of healthy mistrust and civic vigilance, as nuclear-sector expertise remains concentrated in the hands of a small group of highly trusted experts and authorities.[2] The steady advancement of the repository project and the announced revival of the global nuclear industry have fueled hopes that nuclear waste management services and knowhow could become major export products for Finland.[3]

From Exports and Reprocessing Towards a "National Solution"

The beginning of the ONKALO repository project dates back to the late 1970s and early 1980s, when the country's four nuclear reactors were commissioned. Although on the Western side of the Iron Curtain, Finland's foreign and domestic policies were conditioned by the constant need to carefully consider the interests of its great Eastern neighbor, with which it shares a 1 300 km border. As part of such a delicate balancing act between East and West, Finland ordered two reactors from the USSR and two

> The trust-based Finnish governance experience also has its downsides.

Onkalo pilot cave.
PHOTO: WIKIMEDIA COMMONS

from Sweden.[4] The state-owned IVO (today, the 51% state-owned Fortum) built two Soviet pressurized-water reactors in the east-coast city of Loviisa, while the private-industry-owned TVO ordered two boiling-water reactors from Sweden for Olkiluoto, in the municipality of Eurajoki.

In the 1970s, the government's priority option was reprocessing of the spent fuel, and a Finnish-Soviet agreement from 1969 entitled IVO to return its spent fuel for reprocessing in the USSR. In 1978 the government obligated the nuclear utilities to plan for the management of spent fuel. A landmark government Decision-in-Principle from 1983 laid out the strategy and timetable of nuclear waste management for the decades to come. Exporting waste for reprocessing and storage abroad still remained the priority option, yet the strategy mandated TVO to prepare for final disposal in Finland, should this prove necessary.[5]

IVO could still continue its waste exports to the USSR, whereas TVO began to search for a repository site, having excluded the reprocessing option, mainly for economic reasons. TVO started with the intention to survey the whole country to identify the geologically "best" site but soon adopted a more societally informed approach: in 1985, the company announced 102 areas geologically suitable for further investigations. All but one was chosen through a "systematic selection and elimination process'; indeed, TVO justified the inclusion of Eurajoki as the 102nd candidate mainly by the desire to minimize waste transports.[6] TVO then approached all the 66 municipalities in which research areas were identified, to probe local acceptance. In 1987, the company launched preliminary site characterization in five of these municipalities. Facing local opposition, TVO was compelled to give greater consideration to relations with municipal leaders.[7]

Legislative Reforms Lay the Basis For the "EIA Of The Century"

Together with the municipal veto introduced in the Nuclear Energy Act of 1987, two legislative reforms adopted in 1994 accelerated the search for a site for a spent fuel repository and

a switch to a more participatory governance approach. The law banning nuclear waste trade forced IVO to stop its spent fuel exports to Russia. With the Act on Environmental Impact Assessment (EIA) Procedure,[8] EIA became a mandatory step in the planning process. To implement the repository project, TVO and IVO established a joint waste management company, Posiva, in 1995.

In reaction to local opposition in the 1980s, TVO had gradually built up its stakeholder engagement competences, which it then put into practice within what would be dubbed as "the EIA of the century" – the unprecedentedly participatory and ambitious process of consultations, conducted in 1997–99.[9] Posiva's EIA included four candidate sites: two of the candidate sites announced in 1987 had been excluded, whereas Loviisa, the other of the two nuclear power plant sites in Finland, was now introduced, for similar reasons as those for which Eurajoki had been included in 1985. The company considered that chances of success would be greatest in the two nuclear municipalities, where it expected to face little resistance. Moreover, by setting up a rivalry for the repository between the two nuclear communities, Posiva kept its options open and reduced its vulnerability to bargaining by a single candidate municipality.

Decision Anchored in Parliamentary Consensus

Posiva's and TVO's efforts bore fruit in 2000, when the Eurajoki municipal council gave its approval to a repository project in Olkiluoto to host spent nuclear fuel from the Finnish reactors. The subsequent approval by the Radiation and Nuclear Safety Authority, STUK, made it easy for Parliament to ratify the government Decision-in-Principle (DiP) in May 2001, with 159 votes in favor and only three against. Despite its firm opposition against nuclear new builds, even the Green party MPs voted in favor, left with few options after having actively fought for the banning of waste exports to Russia, and for fear of losing support in the "virgin" municipalities (without nuclear power plants), which had successfully campaigned against the repository project.[10]

The DiP, made mandatory by the 1987 Nuclear Energy Act, bestowed parliamentary backing and democratic legitimacy on the project. The function of a DiP is to ensure a nuclear project's conformity with the overall good of society. However, by sealing the decisions early on by a presumably wide democratic debate and parliamentary approval, a DiP also effectively depoliticizes the subsequent steps in the process.[11] The waste repository DiP was widely interpreted as an ultimate solution to the "waste problem", the nuclear industry's Achilles' heel.[12] The problem now "solved", and climate arguments gaining increasing political attention, in 2002 Parliament approved a DiP for a third Olkiluoto reactor. Following years of technical and organizational problems, delays, budget overruns, and disputes between TVO and the French technology supplier Areva,[13] Olkiluoto 3 is expected to finally start regular electricity production 14 years behind schedule, in April 2023.[14]

A (Nearly) Flawless "National Solution"?

The virtually frictionless advancement of the ONKALO project starkly contrasts with the Olkiluoto 3 debacle. In 2004, Posiva began the construction of the underground rock characterization facility. In practice, this also meant the start of repository construction, although the government granted an official construction license for the repository only in 2015. In December 2021, Posiva submitted an operation license application to the Ministry of Economic Affairs and Employment. Pending positive assessment by the safety authority, the government is expected to grant an operation license by the mid-2020s.

The technical repository design is practically identical with the KBS-3 method developed since the early 1980s by Posiva's sister organization and collaborator, the Swedish Nuclear Fuel and Waste Management Company (SKB). Spent fuel would be stored in tunnels behind multiple engineered and geological barriers — copper canisters, bentonite seals on the tunnels,

> The law banning nuclear waste trade forced IVO to stop its spent fuel exports to Russia.

Low level nuclear waste silo in Olkiluoto, Eurajoki, Finland.
PHOTO: WIKIMEDIA COMMONS

and granite bedrock. The project promoters are eager to describe Finnish granite as among the oldest and most stable geological formations in the world.

Ironically, the collapse of the project to build Finland's sixth reactor in Pyhäjoki, in the northwest of the country, removed what had been practically the only glitch in the process until then. The owners of Posiva (TVO and IVO) and the new Fennovoima consortium planning the Hanhikivi 1 reactor in Pyhäjoki had disagreed for several years over the fate of the spent fuel from the proposed new reactor. Fennovoima had thought it could rely on ONKALO, frequently described by the industry and authorities as a "national solution", yet Posiva declared it would only accept SNF from its owners. Surveys conducted in 2016–17 also revealed significant reluctance among Eurajoki citizens towards the idea of disposal of Fennovoima waste in ONKALO.[15] The long-drawn-out, low-intensity dispute, which had forced Fennovoima to explore other options, notably a repository on the reactor site in Pyhäjoki,[16] was suddenly solved in May 2022, "thanks to" the war in Ukraine. Three months after the Russian invasion, and political wranglings over the fate of a nuclear power plant project whose technology supplier and main shareholder was the Russian state-owned Rosatom, Fennovoima terminated its contract with Rosatom. Hence the ONKALO "solution" to the nuclear waste problem could again appear as a "national" one – provided that no new nuclear power plant projects would again bring the issue onto the table and show that ONKALO is, after all, a solution to the problems of TVO and Fortum, not necessarily to those of the nation as a whole.[17]

A number of largely country-specific features help to explain the Finnish miracle, that is, the seeming ease and nearly conflict-free advancement of the ONKALO project.

Explaining the Miracle: Consistency and Stability in Policy and Regulation

For nuclear-sector insiders, the key success factor has been the long-term preparation, clear definition of responsibilities, solid regulatory framework, and consistent implementation of government decisions.[18] The alleged virtues of the Finnish nuclear sector regulatory culture – its flexibility and development orientation

that fosters "gradual learning and refinement" – would be additional success factors.[19] At the heart of this culture would be the collaborative spirit that characterizes relationships between regulator and operators, but also among the key nuclear-sector players: the Ministry of Economic Affairs and Employment, the state R&D institute VTT, the safety regulator (STUK), and the industry (TVO, Fortum, and Posiva).[20]

The stability of the political environment has helped to maintain support for the project, as one government after another has confirmed its commitment to the waste management strategy outlined in 1983. Governments and parliamentary majorities have generally also supported the proposed nuclear power projects, portrayed as vital for the country's energy-intensive export industry and hence for the national interest.[21] Olkiluoto 3 is expected to bring the share of nuclear in the electricity supply up from the 26% in 2021 to about 35%.[22] Public opinion surveys have shown greater support for nuclear power among Finns than in many other Western European countries. The share of respondents supporting nuclear new builds jumped in 2022 from an already high 50% in 2021 to 65%, most likely because of the energy crisis aggravated by the war in Ukraine.[23]

Municipal Autonomy in a Nuclear Community

The single most important factor facilitating the project has to do with the central role of host communities in nuclear waste governance. With municipal autonomy as an undisputed founding principle of Finnish democracy, the views of the municipal council weighed heavily in the national-level debate and decisions on siting. The legally guaranteed veto right gave the municipality significant leverage in negotiations with the industry, at least up until the adoption of the DiP. Local autonomy also meant that Posiva could concentrate its persuasion efforts on a small number of key municipal decision-makers, in the two "nuclear communities" with local opinions largely favorable to the nuclear sector. Over the years, Eurajoki has developed a nearly symbiotic relationship with the TVO and Posiva, to the extent that the local populations took special pride in hosting the repository.[24] Posiva's PR efforts[25] owe their success largely to the groundwork laid since the 1970s.

Beyond pride and responsibility, the symbiosis also meant the economic dependence of Eurajoki on the nuclear industry, which provided a third of the municipality's tax revenue in 2010, mostly through the higher-than-average property tax levied on power plant owners.[26] Until 1994, the municipal strategy had in fact explicitly rejected a nuclear waste repository. The removal of this clause and the subsequent openly favorable position on the project was largely explained by economic reasons.[27] By accepting the repository, Eurajoki also sought to ensure it would win the race against Loviisa for hosting the new TVO reactor. Local newspapers claimed that TVO had pressurized the municipal council to support the repository project.[28]

The voluntary community support provided by TVO and Posiva further helped the companies win municipal acceptance. Through the so-called Vuojoki Agreement, the municipality leased the Vuojoki Mansion, a former nursing home, to Posiva in return for a loan of almost 7 million euros for the construction of a new nursing home. The companies also loaned 1 million euros for the municipality to construct a new ice-stadium (Kojo 2009, 183) and invested 150,000 euros in a business development fund.[29] The sums were modest, especially when compared to the nearly 200 million euros of community support agreed a few years earlier in Sweden between the waste management company and the two host municipalities.[30] In sharp contrast with France, for example, the benefit packages have faced almost no criticism for being a form of bribery.[31]

Citizen Engagement, to Better Legitimize Decisions Made Already?

The principles of citizen participation and access to information are legally guaranteed in Finland, via access-to-information legislation first established in the mid-18th century,[32] as well as the participation and local hearings

> The benefit packages have faced almost no criticism for being a form of bribery.

IAEA Director General Yukiya Amano tours the underground rock characterization facility (ONKALO), a nuclear waste repository, during an official visit to Posiva Oy, Olkiluoto, Finland, 2012. The photo is taken in a demonstration tunnel, at about 420 meters depth. PHOTO: HELKA SUOMI/POSIVA

mandated by the EIA and Nuclear Energy Acts. The 1997–99 EIA on the repository project provided Posiva with the opportunity to inform citizens, and for citizens to express their concerns.[33] However, the EIA is only advisory, and despite Posiva's extensive efforts, a relatively small number of citizens participated. In all its thoroughness, the "EIA of the century" was exhausting for the involved citizen movements, which struggled to find the necessary time and human resources. A leading opponent in Loviisa described the process as frustrating "theater", each party conscious of its role in the play, and aware of the minute if not non-existent impact of the process on decisions.[34] Research has confirmed that the doubts were founded: the repository EIA had little impact and mainly helped to legitimize the decisions, in the context of striking power asymmetries.[35] Citizens blamed the coordinating EIA authority, the Ministry of Trade and Industry,[36] for passiveness and reluctance in ensuring that the process respect not only the letter but also the spirit of the law.[37]

Through the Vuojoki compensation agreement, Posiva effectively selected Eurajoki as a host. This further undermined the legitimacy of the EIA process, which was still underway. What is more, the agreement was negotiated in a small circle, within a working party between the municipal leaders, Posiva, and TVO, shielded from scrutiny by the broader local community.[38]

All-Pervasive Trust – In Honest Engineering

The high degree of trust that cuts through the entire Finnish society has helped the ONKALO project move forward. A whopping 82% of citizens, both nationally and in Eurajoki, trust the nuclear safety authority STUK as a source of information.[39] Eurajoki has willingly delegated all risk-related analysis to STUK.[40] The mistrust of politicians, a feature common to most Western societies, contrasts with Finns' high trust in the ethics, sincerity, and competence of experts, as well as key nuclear waste management institutions. These features are in turn underpinned by an undercurrent of an "ideological trust" in science, technology, engineering, the rule of law, state administration, and state-industry alliances as the foundation of the country's socioeconomic wellbeing.[41] Finns often like to describe themselves as an "engineering nation", which cherishes the values of rationality, pragmatism, honesty, reliability, and result-orientation.[42] The absence of significant nuclear incidents, let alone accidents, has further buttressed such trust and the perception of the near-infallibility of "the Finnish engineer".[43]

The Dark Side of Consensus: Where's The Civic Vigilance?

Arguably, the Finnish experience is context-specific. Furthermore the exceptionally high levels of trust have their dark side: the weakness of healthy mistrust and civic vigilance – founding pillars of liberal democracy. One may therefore ask to what extent the Finnish trust is in this case warranted, indeed to what degree it aligns with the principle that arguably characterizes healthy democracies: "trust but verify!".[44]

As a counterpoint to the pervasive trust towards experts, authorities, and industry, Finns show relatively weak trust in the competence of NGOs, especially in the area of energy policy. A

tradition of counter-expertise typical of countries such as France and Germany is indeed practically absent in Finland.[45] The exceptionally high trust has also contributed to passiveness of local municipalities, which are unwilling to critically review industry's proposals and their safety. This stands in stark contrast with the active vigilance exercised by the Swedish host municipalities, which have made active use of the bargaining power that the municipal veto accords them.[46] Project opponents, in turn, have claimed that the seeming consensus in Eurajoki has been partly achieved via intolerance and social exclusion, as critics have been pushed to leave the municipality.[47]

Final disposal canister for spent nuclear fuel as shown at the Olkiluoto Nuclear Power Plant Visitor Centre. PHOTO: TEEMU VÄISÄNEN/WIKIMEDIA COMMONS

The Finnish state, unlike its Swedish counterpart, does not provide regular financial support for civic vigilance exercised by the municipalities and the NGOs. Furthermore, the simplicity and straightforwardness of the Finnish licensing process, backed up with R&D programs in which a small number of nuclear sector experts and industry stakeholders hold key positions, has its downsides: it lacks the multi-perspective scrutiny that characterizes the Swedish two-track licensing, which involves both environmental and nuclear safety authorities, and is thus likely to strengthen the legitimacy of the project.[48]

The Media: Watchdog or Lapdog

A further symptom of the lack of healthy mistrust is the seeming unwillingness of the media to serve as a watchdog of nuclear waste governance. Since the 1980s, the Finnish media has increasingly relied on information from the industry and the government. The media has tended to depoliticize the debates, failing to introduce new perspectives and elucidate the political choices underpinning the seemingly technical decisions on nuclear energy and waste management. The press often "naturalizes" official plans, schedules, and technical choices as logical and predictable steps in a well-managed process.[49]

A recent comparative study on nuclear waste repository reporting showed that the Finnish leading newspaper, *Helsingin Sanomat*, tended to reproduce government and industry frames, whereas the French *Le Monde* appeared as an independent watchdog and critic of the government and industry. The Finnish newspaper underscored the strong confidence in the country's repository project, whereas *Le Monde* highlighted multiple uncertainties, including those stemming from the complex trust-mistrust relationships between the involved parties. The explanation evoking the high trust prevailing in Finland can go only so far, given that the Finnish press also differs from its counterpart in equally high-trust Sweden. A recent study showed how the leading Finnish press rehearsed industry and government views, whereas the major Swedish newspapers gave more space to views from a variety of experts and NGOs.[50] It is symptomatic that the Finnish press has hardly mentioned the lively scientific and public controversies that have taken place in Sweden over the rate of corrosion of the copper containers – the key engineered barrier in the KBS-3 disposal concept.[51] In Sweden, the "copper controversy" was at the heart of the licensing process and media debate, and was even seen for a long time as a potential showstopper.

Democracy Undermined by an Excessive Trust in The State?

Lastly, and most fundamentally, the Finnish nuclear waste management policy has been

> Doubts have arisen even among members of the 'inner circle' of the Finnish nuclear regime.

characterized by depoliticization, whereby decisions and vigilance are delegated to highly trusted state institutions.[52] In the face of the strong, independent, and trusted state administration, political parties have remained weak channels for the expression of a diversity of citizen views. Some go as far as to evoke a Finnish "Untertanengeist", a spirit of subservience inherited from Finland's long periods under Swedish and Russian rule.[53] A sign of subservience or not, Finnish post-war policy culture has been characterized by a certain passiveness and weak legitimacy of radical citizen activism. Where Swedish consensus politics are characterized by the values of deliberation, rationalism, and openness, Finnish policy culture displays a different version of consensus – less deliberative[54] and more permissive to authoritarian solutions than the Swedish one.[55]

Importantly, doubts have arisen even among members of the "inner circle" of the Finnish nuclear regime, who have evoked potential downsides of the scarcity of critique.[56] The incontestable virtues of consensual and effective decision-making have come at a cost: when taken to an extreme, trust in experts, authorities and the state can undermine the foundations of democracy even in a Nordic trust-based society.

Looking Ahead: Finland as a Waste Management Superpower and Exporter?

The nuclear waste problem now presumably "solved", and the question of what to do with the waste from the Fennovoima reactor off the agenda thanks to the abandonment of the project, Finland is viewing opportunities to become not only the first in the world in the field, but also a major exporter of nuclear waste management services and knowhow. Actors such as the energy industry, start-ups, and "ecomodernists" have advocated for relaxation or removal of the waste import and export ban, arguing that this would help create lucrative business opportunities and thus serve the national interest.[57] Importantly, in the context of the rapidly growing enthusiasm for small modular reactors (SMRs) as a replacement or complement to traditional large-scale nuclear power plants, allowing waste trade would also diversify the options available for managing the waste from SMRs. Despite the fall of the Fennovoima project, the longstanding narrative of a centralized national solution and national responsibility is again under strain, as responsibility is being reframed in increasingly international terms. These new waste business ideas will face a reality check as and when SMR projects start to take shape, the question of SMR waste management enters the political agenda, and if concrete initiatives are tabled to redefine the internationally agreed principle of "national responsibility" for nuclear waste management.[58] Even in high-trust Finland, public acceptance for such transformations cannot be taken for granted, neither at the local nor at the national level.[59]

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Georgia's Modern (*Not so* Environmental) Problems. The Nature of Road and Energy Infrastructures

by **Beril Ocaklı** and **Benedikt Ibele**

When the re/construction of the Rikoti Highway started in 2019, what happened next would first take the owner of the river restaurant Sanapiro, Gia Gogoladze, by surprise and then shatter his subsistence: "I am happy that they are constructing the road but [...] they narrowed the riverbed and rerouted the river. My restaurant was flooded seven or eight times. I approached the [Chinese] construction company and they helped me with their equipment a couple of times. But they told me: 'We are powerless; this has to be decided by the Roads Department, it's not our business.'"[1] Speaking in riddles, the Roads Department commented on Mr. Gogoladze's grievance that "[t]he location of the restaurant by the river was chosen by the owner himself. If damage was done by the river, then it's clearly not caused by the highway construction," adding, according to Mr. Gogoladze's lawyer, later on: "The closer the restaurant is to the highway, the better it is [for business]."

The only problem was that by then, there was no business left for Mr. Gogoladze, as his "restaurant was swept away by the river."[2] The River Dzirula and Mr. Gogoladze's restaurant co-existed in harmony for 30 years: That is, until a series of moral choices and political decisions about road construction and its impact on the environment culminated in a rerouted river, a man losing his livelihood, and the state depoliticizing its responsibility. At what point

> The River Dzirula and Mr. Gogoladze's restaurant co-existed in harmony for 30 years.

Mr. Gogoladze standing on the terrace of his now defunct restaurant, close to the highway near Vertkvichala in the Imereti region. Snapshot from the Kutaisi Post video story 2021.

do the natural lives of the state, the road and the restaurant end and the social life of Dzirula begin? Infrastructure, as vehicle of modernization, has never been just infrastructure.[3]

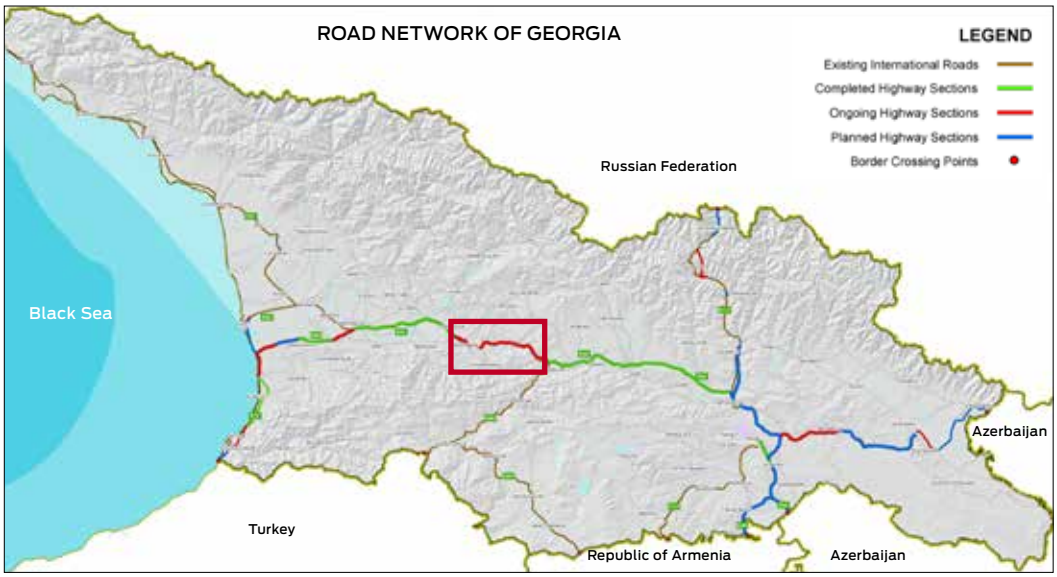
Infrastructures are reasons for and results of social orders, (geo)political dynamics, financial flows, technical networks, *and* tampering with nature.[4] Roads, gas networks or hydropower plants are mobilized with promises of progress for imagined modern futures. The Rikoti highway, where Mr. Gogoladze's restaurant used to stand in its entirety and host travelers, has become the subject of unprecedented attention since the war in Ukraine. As Georgia is a country that had already suffered more than once from Russia's aggression,[5] the highway construction has been underway as a national security and international connectivity project long before the Ukraine war.[6] Even so, the war brought the Middle Corridor and with that Rikoti into the geopolitical spotlight, as it has become a desirable alternative to northern transit routes through Russia, especially for Europe and China.[7]

> Infrastructures are reasons for and results of social orders, (geo)political dynamics, financial flows, technical networks, and tampering with nature.

Russia's war against Ukraine also revives memories of past energy crises in Georgia and beyond[8] that have made energy independence a top (geo)political priority for the country. In 2006, country-wide black outs had resulted from weather-induced damage to ramshackle networks that coincided with explosions on gas pipelines delivering Russian natural gas,[9] just as tensions were already building up to the war with Russia in 2008. To break free from Russian dependence, the construction of further hydropower plants was pushed forward again, reviving modernizing projects of Soviet Georgia. For natural gas, Georgia turned to Azerbaijan, deepening existing dependencies.[10] Both natural gas and hydropower in and of themselves pose threats including but not limited to global commons such as biodiversity and climate that Georgia has committed itself to protect;[11] just as it has committed itself to building more, not fewer, large infrastructure projects. There is however more to this inherent contradiction than meets the eye. The reality of ordinary citizens living in rural Georgia, who are unable to afford even subsidized electricity and gas, is neglected. All the while, it is also they who live in, with and around the forests – the object of Georgia's biodiversity and climate commitments.

The omnipresent reality of the war, the associated heightened sense of finally doing away with the remnants of the Soviet Union and the war's implications have foregrounded geopolitical urgencies, pushing socionatural exigencies into the background. Our aim in this article is to recenter and situate Georgia's challenging society-nature relations in controversial state policies and practices, focusing

PHOTO: COURTESY OF THE ROADS DEPARTMENT



Georgia's road network, depicting the country's roads already built, under construction and planned; the red square points to the currently re/constructed Rikoti section of the East-West Highway.

PHOTO: WIKIMEDIA COMMONS

Map of the East Highway (E60); Georgia in the red square (NNW, CC BY-SA 3.0).

empirical attention on the country's roads and energy-forest nexus.[12] Historical continuities in state governance that separates the social from the natural, and the resulting chasms between policies towards "the environment" and lived environmental practices, underpin our motivation to write in this contribution against defining the problems as "environmental". Instead, we trace and unpack the prevailing hybrid socionatural order and its problematic ramifications in Georgia, first along the nation's East-West transport corridor and then in its forests. These challenges, we argue, have been co-produced by human-environment relations over time in different sites,[13] including across Soviet/post-Soviet temporalities, modernities, and politics.[14]

A Nation and Its Roads

"Everybody dreamt about it; we are building it", boasted a representative of the Roads Department in an interview in 2022 about the long-awaited re/construction of the 51 km Rikoti Bypass Road. Improvement of "Rikoti", as it is referred to colloquially, had been ideologically and discursively under way since 2008 under

A picture of one of the new Rikoti Highway bridges near Ubisa in the Imereti region (taken during fieldwork conducted by Beril Ocaklı in Georgia in 2022).

PHOTO: BERIL OCAKLI

the Saakashvili government. Yet it wasn't until 2016 that the Georgian government finally launched the road construction and rehabilitation. Rikoti connects Tbilisi and the country's east to its west on the Black Sea coast. Zooming out, the transregional scale of Rikoti's, and with that Georgia's, significance also becomes legible. As part of the East-West Corridor Highway or E60, the pass road connects Asia to Europe, spanning Irkeshtam in Kyrgyzstan on the Chinese border to Brest in France on the Atlantic coast. Proclaimed by the incumbent government as "the project of the century",[15] according to the project owner Roads Department, the upgraded Rikoti is expected to improve Georgia's connectivity and help the country reclaim its position on "the modern Silk Road"[16] as a trade and production hub, hence boosting economic growth.[17]

The prospects of a renewed, four-lane high-capacity Rikoti have been without doubt well received, within and beyond Georgia's borders. After all, Rikoti is a road that travelers despise for its current condition, and not just vacationers from Tbilisi wanting to reach Batumi as quickly as possible. The road is after all the only year-round route if you want to travel fast across the country. Also beyond Georgia, the Rikoti section of the E60 has come to be seen as "a bottleneck" in the East-West connectivity, increasingly so since the outbreak of the war.[18]

This transit route, for both goods and people, runs through difficult mountainous and fragile terrain; it is narrow and dangerous. Beyond its constituting function in the "Middle Corridor", the Rikoti project is also the latest in a series of logistics and infrastructure projects of the century that, all together, strive to mold Georgia's unruly geography into an inviting transit corridor but also to forge ahead with Georgia's post-Soviet modernization. With 88 bridges and 51 tunnels, the road construction sets out to flatten out the Rikoti road, running from Surami in the East to Zestaponi in the West. In 2020, then Minister of Infrastructure Maia Tskitishvili stressed in what looked like a state-financed promo video the grandness of the project, lending it a legacy character: "In terms of its scale, significance and impact [...] we can say that it is a project of the century. Even in the South Caucasus, projects of such scale and complexity are not being implemented."[19] The poetics of connectivity to modern Western futures, however, diverge from practices on the ground, revealing uncanny similarities to Soviet promises of grand modernity and centralized governance.

The making of the post-Soviet economy in Georgia has been as much ideologically driven by liberal imaginaries of modern Georgian futures as by seemingly reckoning with and liberating from the Soviet past. In practice, however, post-independence political regimes have used the Soviet past while abusing people's realities and rights during the planning and execution of infrastructure and energy projects.[20] Most notably, from 2004 in the Saakashvili era, economic reforms instrumentalized public mistrust of state ownership[21] to affectively and effectively legitimize the reckless neoliberalization of the economy and prioritization of private foreign capital. Different infrastructures in post-Soviet Georgia have also come with promises of "sensorial and political experiences"[22] that would be far removed from those of Soviet times. Oriented towards creating efficient markets for foreign capital, the radical economic liberalization indeed meant scrapping any regulation that could be indexed as

a barrier to business on World Bank rankings of doing business, inter alia environmental policies.[23]

In relation to Georgia's aspirations towards EU Membership and signing the EU-Georgia Association Agreement in 2014, the government has made strides in environmental, energy and climate policies. Regardless, the Georgian state continues to be neoliberal in its law enforcement and regulations can be re-regulated after business and economic growth.[24] While "less neoliberal in stature",[25] Georgian Dream politics thus retains the "investors first" approach to the state's mode of governance.

Yet, "[s]ocial events need different explanations today", as a human rights and social justice activist states, stressing the need to go beyond the analytic of neoliberalism: "Now, state surveillance and control of narratives are important too."[26] Indeed, the project of remodernizing and neoliberalizing Georgia westwards has been contingent upon keeping, if not entrenching, the interrelated dividing lines that Soviet modernity introduced between the state and societies, and societies and their natures. Continuing to privilege (foreign) enterprise even in today's Georgia translates into privileging the state's framing of facts over people's embodied social and environmental "matters of concern".[27] Just as making nature subservient to man was at the heart of extractive Soviet modernity and its concomitant dogma of progress,[28] so does the post-Soviet state in Georgia continue to separate society from its natures.[29] And with that, in new bodies and brands, the maxim of modernization over democratization lives on.[30]

Beneath the veneer of a caring, environmental state, only facts that matter for the state continue to be disclosed and disseminated. This is particularly the case around large-scale infrastructure projects such as the Rikoti construction where the scale of adverse impact, and by implication public concern and contestation, can also be correspondingly large. A seasoned environmental defender helps us make sense of the governance mechanisms: "The [g]overnment uses salami tactics: dividing projects into small sections so that the overall environmental impact and construction costs remain unclear [...] We lack information on what is going on and what the impacts will be."[31] She thereby refers to systematic violation of citizens' environmental rights to information and participation in the ongoing Rikoti and Kobi-Kvesheti road constructions, the key East-West and North-South corridors, respectively. After all, "public participation is impossible without access to public information".[32] Thus, controlling information flows about the design, execution and consequences of infrastructure projects for intertwined socionatural lives serves as a basis for controlling environmental narratives, excluding the participation of concerned communities and engineering consent. If after all, consent cannot be engineered with propaganda and governance of exclusion, lack of transparency around planned projects may trigger irrepressible community protests.[33] The state may then ignore or deny the existence of the affected people's pleas, or discipline and discourage them through derogatory discourse,[34] pointing to yet another element of Soviet governance that continues to linger.[35]

The state's strategic environmental ignorance, in Tsintsadze's words, "sets up the preconditions for making environmental harm – and, by implication, social harm – invisible."[36] If the voices become visible, as was the case with the construction of the Namakhvani HPP in Rioni,[37] the portfolio of tactics expands and evolves to perform "a politics of 'as if'".[38] Just because ENKA Renewables LLC's contract with the Georgian government might be off the table for good,[39] it does not mean that the state will stop building large hydropower plants. Using what became a historic nationwide movement, in a sudden plot twist the current Prime Minister Garibashvili stated last year that: "large hydropower plants, including Namakhvani, Nenskra, and Khudoni, should only be implemented with the involvement of the state so that they belong to the [Georgian] people and the state, and not to private investors."[40] This statement is telling even beyond hydropower as it concisely represents the state's approach to society-nature relations. It is at once a confession about

> The post-Soviet state in Georgia continues to separate society from its natures.

> Firewood is still the only affordable source of fuel for most of the rural population.

the absence of a responsible state in previous deals with the investor and a co-optation of people's opposition to a vague yet potentially harmful project. It reframes people's protest as anti-investor, all the while distracting, through populist discourse, from what they are about in the first place: fundamental human rights.[41]

This portfolio of governance tactics, mixing neoliberal economic policies, authoritarianism, and national populism, is not unique to Georgia and has also emerged in other post-Soviet geographies such as Kyrgyzstan.[42] Yet Georgia stands out. The current governance of large-scale infrastructure deviates from the model of relegating the social contract to corporations in a well-established frame of corporate social responsibility (CSR). Instead of leaving companies and communities to their own devices,[43] the current government protects its "projects of the century" with a firm grip, making sure that concerned communities can neither talk directly to the companies nor to government officials. In the end, existentially affected groups such as highway vendors all the way from Surami to Zestaponi end up finding out about the construction plans when the road actually starts to be constructed – despite thousands of report pages elaborating on social and environmental impact monitoring. Among these are people who have to leave their ancestral homes due to land expropriation for project execution.[44] The Roads Department representatives denied these grievances as rumors when asked about them in an interview.[45] The Rikoti construction is projected to be completed in 2024.

Nature and Its Energy

Akin to road infrastructures, energy discourses and actions are also decoupled from the people's everyday realities, bringing in their wake further challenges to the environment and society in Georgia. Above all, Georgia's policy of developing hydropower, mobilized to simultaneously achieve climate neutrality and energy independence,[46] neglects the reality of Georgians living in rural areas who depend on firewood as their primary source of energy for heating.[47] This dependence is a continuation of Soviet politics into the post-Soviet era that largely disregards the needs of rural Georgians. Firewood has been an essential part in the energy mix since Soviet Georgia and consumption even increased after the Soviet Union collapsed.[48] As independent Georgia lacked the capital to continue energy subsidies, the state instead privatized state-owned utility services. This led to underinvestment and eventually interruptions in or even a lack of service delivery, especially in the periphery.[49] Even urban areas including Tbilisi had to resort to firewood for extended periods of time, well into the 2000s.[50]

While advances in energy infrastructure since then provide a stable supply of electricity and gas to cities and most of the regions,[51] dependence on firewood persists, not least due to persistent low income levels in rural areas.[52] Energy policies have been geared towards completing the unfinished Soviet project of connecting the remaining villages to gas, ensuring a stable electricity supply, and finding the "right" price for energy.[53] However, firewood is still the only affordable source of fuel for most of the rural population[54] and energy subsidies benefit only those who can afford gas and electricity.[55] National policies do not offer alternative affordable energy but instead point to upcoming donor funded projects for introducing improved stoves for more efficient heating with firewood.[56]

The state's exploitation of forests' silent social subsidy seriously jeopardizes Georgia's international commitments to help mitigate global biodiversity and climate crises. Georgia's forests are home to a unique biodiversity[57] of global significance, and play an important role in climate change mitigation and adaptation. Under the Paris Agreement, the country committed to carbon sequestration in forests[58] and many of the habitats that are meant to be protected under the Bern Convention under the Council of Europe[59] lie in the forests. The use of firewood (Fig. 4) in connection with illegal logging, however, resulted in serious forest degradation, especially in the vicinity of settlements and roads.[60] Forest degradation in turn affects the availability of firewood, as accessible

Firewood harvested under the "social cut" on the way from the forest around Gori in 2017.
PHOTO: BENEDIKT IBELE

Prepared firewood for winter in a village close to Akhmeta in 2020.
PHOTO: BENEDIKT IBELE

logging areas are depleted. The new forest code of 2020 aims to intervene in these problematic socionatural interdependences and re-regulate relations between people and forests, yet again.

The first attempt at forest sector reform started with a new forest code in 1999 and was financially supported by a 15 million USD loan from the World Bank. The new legislation was meant to reform the centrally planned sector and set the framework for more market-oriented forest management, also preparing the ground for forest concessions.[61] Following the adoption of another law on licensing of natural resources in 2005, auctioning of forest concessions was initiated without accurate information about their economic and ecological value. Forest inventories were supposed to be financed by the loan agreement, which was however prematurely terminated due to disagreements between the then new Saakashvili government and the World Bank. The auctioning of concessions based on inaccurate inventories[62] was later on acknowledged as devastating for licensed forest areas as well as the country's economy.[63]

In the haste to auction off concessions in 2006, the energy needs of the rural population were forgotten. When winter came, no one, including law enforcement, knew how ordinary citizens could get a legal license to collect firewood, so people just took to the forests as usual, while forest authorities did not interfere.[64] As a

> They are modern problems, created and exacerbated by a politics of ignorance and neglect.

convenient state response, the system of "social cut" was introduced in 2011,[65] granting a ticket for firewood harvesting to every household in rural areas. By legalizing an existing practice, the social cut system further entrenched the naturalization of a social problem. At the same time, forest governance was demoted to a department in the Ministry of Energy and Natural Resources, reflecting the dismal importance given to forests.

The new forest code adopted in 2020 seemingly reconciles these contradictions by setting the course for ecological management of Georgia's natural forests and sustainable firewood provision for the rural population. A centerpiece of the reform is the attempt by the state to regain control of its forests; the National Forest Agency is strengthened as primary management body and the Department for Environmental Supervision is supposed to tighten its control of unlawful activities. It remains to be seen if the demand for firewood can be met sustainably, given the limited capacities of the National Forest Agency.

Even then, the current practice of heating with firewood comes with considerable health risks[66] and does not comply with agreements for EU association.[67] Rethinking energy policy, such as reforming subsidies, and rural development can certainly not be put off much longer. The precarious situation of Georgia's forests and the institutional limitations such as of the National Forest Agency, that do not correspond to the scale of its responsibilities, call for urgent attention. What is more, better protection of forests runs the risk of leaving the rural population without affordable energy. This might explain why the move away from the social cut system is going much slower than initially foreseen in the forest code, despite considerable international support.[68]

So far, despite the changes introduced by the new forest code, the practice of firewood collection has not been affected significantly. The termination of the social cut system was postponed from January 2023 to January 2026, just before 2022 ended.[69] However, if firewood remains the only affordable energy source Georgia can offer to its rural population, it remains to be seen if its society-nature relations can truly be reconciled.

Georgia in the Anthropocene

Projects of taming geographies are also projects of taming people. In Tbilisi, we have seen what such projects of modernization of socionatural spaces can do – most recently in 2015, when the supposedly tamed river Vere burst its banks, claiming 19 human and almost 300 zoo animal lives.[70] Following heavy rains, a landslide upstream linked to forest degradation induced a flash flood in the city, washing away 700 homes as well as the Tbilisi Zoo. Just like Dzirula now, Vere was also once re-routed for hasty road construction and urban development under governance of exclusion. The Tbilisi flood and the lost lives, not only human; flattening the Rikoti and meddling with the Dzirula for progress while cutting off people's existence; simultaneously praising and preying on biodiverse forests – are these environmental, geological, social, political, economic, or moral problems?[71] They are modern problems, created and exacerbated by a politics of ignorance and neglect.

Epitomizing our current geological era, the Anthropocene, these problems render "[d]early held distinctions between material conditions and social existence"[72] a modern illusion. Political infra/structures in the Anthropocene have to come out of hiding, and make progress, not talk progress, by making "externalities" visible and accountable.[73]

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Hungary

Orbán's View on Nature. The State and the Environment in Modern Hungary

by **Viktor Pál**

In 2010, the national-conservative Fidesz party led by Viktor Orbán gained the parliamentary majority in Hungary and soon made political decisions which were contested by critics both at home and abroad. Several EU institutions expressed a growing concern about the actions of the Hungarian government, which contributed to the creation of the European Rule of Law Mechanism, in order to systematize an annual dialogue process between the Commission, the Council, the European Parliament and other stakeholders, such as national parliaments and civil society. The Rule of Law Mechanism has been rooted in the growing concern about a number of social and economic issues in Hungary, for example, the increasing control of the Hungarian media by Orbán's allies, constant reports about institutional corruption, which seriously affected the use of EU funds, as well as periodic political attacks in Hungary on LGBTQ and migrant communities, as well as women's rights.

Orbán's conservative rhetoric was not confined to human issues but affected non-human as well. Environmental activists have accused the Hungarian government of facilitating the exploitation of vulnerable ecological areas in the country, for example, via commercial forestry, trophy hunting and the promotion of mass tourism and waterfront development. Critics suggested that Orbán's government has been using nature as a resource to help generate profit by a select group of government-friendly businessmen. Environmental organizations have warned that, for example, one main reason for "reorganizing" the nation's environmental protection system was to ease the government's extractive and pro-industry policies. This led to the partial dissolution of the nation's nature conservation system by sacking around 75% of its employees in the mid-2010s.[1]

Critics have argued that after reducing the capacity of the environmental protection system, the government introduced the "re-industrialization" of Hungary and helped both large multinationals and domestic businessmen to build their new production facilities. However, it was not only the manufacturing sector that received help; the agribusiness and tourism sectors experienced a growing capital inflow from domestic investors, often with close ties to

Part of Lake Balaton's cemented shoreline.
PHOTO: WIKIMEDIA COMMONS

the government and easy access to the EU funds distributed by the government. This all led to a deterioration of the ecological situation in Hungary, critics claim.[2]

Aims. Exploring the Root Causes

Hungary's current environmental policy has been substantially criticized due to some worrying trends. However, critics also employed politically and emotionally biased methodologies on a number of occasions. Consequently, the root cause behind Hungary's new environmental policies remains unclear. Nevertheless, such an explanation could be beneficial to understanding the underlying reasons behind the environmental policies of Orbán's government, as well as indirectly answering questions about the domestic popularity of Orbán's ideas. Thus, in this paper, I take a deep look into the present and past of Hungary's woodlands, wetlands, and floodplains, as well as Lake Balaton, the country's main tourism area, all of which have been key elements of the reorganization of state-led human-nature relations since 1800, as well as in post-2010 Hungary.

I argue that nature has been paternalistically overseen and controlled by the Hungarian state for nearly two centuries in order to generate profit and serve what had been perceived by different governments as the "needs of the nation". These tendencies have been present in overarching historical periods up to the present day, and the paternalistic and controlling state has been pursuing goals similar to the goals of the Orbán administration since the beginning of the nineteenth century. I argue that, on the one hand, environmentally focused state actions were rooted in Prussian and Austrian examples, while on the other hand, state actions have been influenced by regionally developed scientific theories rooted in the specific environmental, cultural and social conditions of the Middle Danube region.[3]

Thus, instead of repeating the mantra, that the ideas employed by Hungarian illiberals have been controversial and on several occasions harmful to the environment, this paper aims to place the actions of the Orbán administration within the frame of the politico-scientific thinking in the Pannonian Basin in the last two centuries. To achieve this, the

> Nature has been paternalistically overseen and controlled by the Hungarian state for nearly two centuries.

paper walks the reader through key areas of state intervention in Hungary regarding the environment, with particular focus on those aspects that have also been of key importance over the last two centuries. Firstly, the paper will analyze state involvement in forests. This is because forests were one of the first venues of systematic environmental intervention by states in Europe, including Hungary.

The paper then shifts to landscape engineering and hydrological planning, which have been also key spheres for the manipulation of the environment by the state in Central and Eastern Europe, among which histories the Hungarian landscape engineering project stands out because of its size and also because of its complex environmental impact in the past two centuries, as well as post-2010. In this respect, particular attention will be paid to a unique form of landscape engineering in connection with waterfront tourism. This particular mode of landscape engineering has been a key element of the tourism region of Lake Balaton, as well as a relatively new area in which the Hungarian state exercised its power and control over non-human issues. Lastly, this paper will connect past actions of the state in Hungary under Habsburg rule, during the nationalist interwar period, as well as the postwar state-socialist period, including the post-2010 state, with particular attention being paid to the Orbán administration's actions, which – as I argue – directly bases its environmental policies on the environmental discourses of previous regimes, creating continuities of the past in a number of environmentally-related venues.

Orbán in the Woods

Forests were some of the first ecosystems in which state intervention became systematic, restricting grazing and the complex forest use by local communities. Similarly, to the German speaking lands, in the 19th century, state-backed commercial forestry clashed with the interests of rural communities in Hungary. Also, 19th century ideas in Europe about the promotion of sustainable forestry were increasingly associated with the concept of the nation, and Hungary was no exception in this respect.[4]

> The already racialized and ideologically nationalized environmental discourse took an even more extreme turn.

Even though the Forest Act of 1879 was praised by the scientific community as a vehicle for *nachhaltigkeit*, an early and narrowly understood form of sustainability, in reality, the act aimed to ensure high timber output, as well as significantly obstruct the complex forest use in the Carpathian Mountains by its mostly Slovak, Romanian and Rusyn communities. In this context, forest science, as proposed by Hungarian-speaking scientists and politicians, could be interpreted not only as a vehicle for state control over precious timber resources but also as a spearhead for the national interests of Hungarian speakers. By the late 19th century, similarly to many other European countries, the discussion about the control of forest resources had also become radicalized in Hungary. In this respect, the Hungarian scientific-political discourse on the eve of World War I resembled the dialogue typical to many European countries. This dialogue sought an explanation for both social and environmental issues, such as deforestation, using xenophobic and racist science, often wandering into the territory of pseudo-scientific theories. In this respect, several Hungarian-speaking scientists blamed ecological issues in the forested mountains on the perceived "unpatriotic" behavior of the Romanian, Ruthenian and Slovak ethnic communities who resided in these mountainous areas and aimed to use the landscape and forests to benefit their own communities, not the state. In addition, similarly to other European countries, antisemitism was growing rapidly in late 19th century Hungary, and some radical scientists and politicians blamed Hungarian Jewish businessmen and bankers for what was perceived by nationalists as the exploitation of the nation's forests.[5]

After the dissolution of Austria-Hungary in 1920, the already racialized and ideologically nationalized environmental discourse took an even more extreme turn. Again, this resembled the racializing and extremizing discourse in Europe, especially in German-speaking areas. After the split of the historical Kingdom of Hungary, much of the timber, game and other natural resources came to be part of neighboring nations. This terrified the nationalists.

Before World War I, nature was anxiously defended from "foreign" influences. However, the trauma of 1920 significantly increased radicalism and beating the xenophobic drum became a mainstream practice in both the scientific community and in politics. For example, Elek Schmidt depicted the *zeitgeist*, as both empire and country were "robbed" of Hungarian speakers. This sense of losing control of the Pannonian Basin was extended to include the lost influence over the environment (landscapes, resources, ecosystems), something which should have been firmly controlled by the Hungarian- speaking elites, according to many contemporary scientists and politicians in interwar Hungary.[6]

In post-1920 Hungary, which had retained only around one-third of the former Kingdom of Hungary, in an area comprising 93,030 km², nearly one-fourth, 21,200 km² 21,200, were located in the floodplains of the Danube and Tisza Rivers. As a result of this new geopolitical situation, a significantly higher proportion of the country's population now resided in the floodplains than previously. Floods and floodplains had already been an important part of human-nature relations but from the beginning of the interwar period, they gained central significance in environmental science.[7]

The central areas of the Carpathian Basin, which contemporary visitors generally perceive as a "pretty landscape", is in fact a double-triple reengineered, anthropocentric, and heavily depleted environment, altered by both river regulations and subsequent irrigation networks. Landscape reclamation in Hungary was promoted by enlightened monarchs – Maria Theresa and Josef II – as early as the 18th century. The anthropocentric alternation process gradually sped up in the mid-19th century. At the time, scientists and politicians alike were convinced that regulatory projects were necessary to take control of the central plains and thus make Hungary prosperous in the agrarian and industrial sector. Only a few scientists, who were pushed to the margins, warned of the potentially disastrous ecological consequences. The mainstream scientific discourse was focusing on the benefits of reclamation: the envisioned economic prosperity.[8]

Floods in Komárom, Hungary.
PHOTO: PIXABAY

In the interwar period, science in Hungary reproduced this 19th century discourse about prosperity and control, but with an even more nationalistic tone. For example, Elemér Sajó, a prominent hydrologist, who led the Department of Water Engineering at the Ministry of Agriculture from 1930 until his death in 1934, maintained that Hungary was a hydraulic society and the more effectively it took control of its waters bodies and employed them, for example, via the use of irrigation systems, the more successful the country could become. Thus, for Sajó, among many other contemporary thinkers, the mastery of nature was directly linked to Hungary's economic-political revival.[9]

Shortly after World War II, Hungary became part of the Soviet sphere of influence. This should have resulted in a stark change in the ideology of landscape and hydrological planning because of the radical shift from a nationalist xenophobic and, at the end of the war, Nazi ideology, to Stalinist communism. However, many elements of previous scientific theories remained, albeit without their implicit nationalist, xenophobic and racialized elements. Pre-existing ideas about the control and paternalistic governance of the environment were, in any case, altered to make them more aligned

> The environmentalism of Soviet scientists detached the ideal from reality.

with the communist ideology, which maintained that central control by state authorities was always more beneficial for the environment than the weak state that had enabled the environmentally harmful activities of private actors, for example, in the interwar period. In the eyes of communist hydrologists – including Kálmán Rajczi, first director of the General Directorate of Water Management – the paternalistic role of the state was mixed with the notion of the superior communist ideology, which, combined, called for the implementation of Soviet- inspired holistic environmentalism. The environmentalism of Soviet scientists detached the ideal from reality even more starkly than previous forms of nationalist environmentalism. For example, Rajczi believed that socialist societies could live in harmony with their environments, due to their excellent approaches to planning and econo-political system.[10]

Paradoxically, it was after Stalinism, post-1956, when Soviet environmentalist ideas of complex attentiveness toward nature fully blossomed in Hungary. A cohort of hydrologists, who perceived themselves as progressives – Dénes Börzsöny, Ede Kertai, Imre Dégen, András Madas, István Oroszlány and József Mantunánó – held powerful positions in the state bureaucracy and education. Despite the growing influence of environmental holism and respect for the limitations of ecosystems, as well as maintaining that both human and non-human issues were equally important, advocating for a symbiosis between society and nature by setting the limits to growth as early as the 1950s and 1960s, the progressives made little impact on practical planning procedures.[11]

The implemented reality of socialist forestry and hydrological science was significantly grimmer than the poetic holism of self-proclaimed socialist environmentalists. Environmental engineering practices under socialism, similar to the practices in the interwar and Habsburg periods, retained their paternalistic approaches of control and management, but with new and more powerful state authorities than previously, which contributed to environmental impacts on a wider and more intensive scale than before. The intensification of human control, however, was not without a profit motive, not even for the socialists. For example, the alternation of mass tourism areas, such as Lake Balaton, often marketed in tourist brochures as the Sea of Hungary, and adjacent landscapes "creatively" labeled the Hungarian Riviera and the Toscana of Hungary, were key venues for this process of intensification.

In 1964, the Lake Balaton tourist area welcomed over 1.3 million foreign visitors and was an established holiday destination for both Eastern and Western Europeans. The Hungarian tourism industry competed with the rapidly developing Yugoslav, Romanian, and Bulgarian resorts, despite Lake Balaton being a modest lake region and not a significant coastal region. The lake is less than 600 km^2 with an average depth of around four meters. Its modest geographical features contributed to relative unpredictability when it came to water surface and quality.[12]

Consequently, state efforts to balance nature and make Lake Balaton easier to control had already been present in the Balaton area for over a century. Central to these efforts was the construction of a "well-defined" and "stable" shoreline, as well as the water level in the lake. Although the state's efforts to stabilize the water level in Lake Balaton lasted for over two centuries, the level of control that was sought by state socialism was unprecedented.[13] Consequently, by the late 1960s, nearly one-third of Balaton's shoreline, roughly 60 km, had been cemented. The lake was intended to serve as a gigantic bathtub for millions of visitors annually and generate convertible currencies for the economically struggling regime.[14]

It was also important that Lake Balaton's newly cemented basin served the massive influx of tourists. Many new facilities had to be constructed, from hotels, guesthouses to camping sites and restaurants. Foodstuffs and beverages had to be manufactured, drinking water supplied and sewage collected and treated. Tourists were supposed to feel that Lake Balaton was not only "civilized" but was in close proximity. Thus, the road infrastructure was

strengthened, both around the lake and to the capital Budapest, as well as eventually toward Hungary's Western border crossing in Hegyeshalom, near Vienna. Construction of the M7 freeway began in 1964. This represented a harsh difference between the environmentally attentive scientific theories and the environmentally exploitative reality.[15]

Despite the evident contradiction between theory and practice, the socialist state's ideology remained unchanged and presented itself as a superior system to ensure an environmentally attentive coexistence with non-human issues, as opposed to "colonialist" capitalist regimes.[16]

Orbán's Nature

Today, the dominating view of social sciences about Hungary's government, and especially Viktor Orbán, the country's prime minister and undisputedly the most powerful person in the country since 2010, is that the environmental policies which have been proposed in the last decade or so are anti-environmentalist and pro-industry.[17]

Although the overall picture is grim, when you take a deeper look at specific environmental issues, investigations may suggest that the situation is more complex, and even confusing when it comes to the self-proclaimed "illiberalism" and the environmental attitudes around it. For example, trophy hunting, one of the most controversial environmental issues in recent years in Hungary, employs different understandings of the environment.

Generally, two major viewpoints have been represented in the scholarly (as well as the political) debate globally over trophy hunting. Those who take a utilitarian perspective support hunting and argue that trophy hunting is a conservation tool that creates equitable net conservation benefits for local human communities co-existing with wildlife populations. However, this school of thought often disregards the negative consequences of trophy hunting, such as a painful death and the suffering of animals. Nevertheless, the responses and policies of the Orbán government, derived from its nationalist-historical influences, connect with the utilitarian position. Critics of the utilitarian viewpoint suggest that hunting for food is accepted ethically, while hunting for "sport" such as trophy hunting is not, because of the way it interferes with individual animal rights, for example. However, Hungarian hunters and government officials claim that trophy hunting is an important tool for conserving species and maintaining an important element of the national culture.[18]

Views about hunting clashed in 2021 when Budapest hosted the World Hunting and Nature Expo. The government and its sympathizers claimed that the Expo was an extremely important event for conservation, human and non-human relations, as well as celebrating the importance of hunting in Hungary's history and culture. Thus, the government's perception of hunting represents a continuity of previous historical periods, especially of the Habsburg and interwar periods, when the notion of a Hungarian-dominated state was supposed to act on behalf and for the benefit of Hungarian speakers, which included the utilization and potential exploitation of other human groups and non-human groups.[19]

An even more divisive issue that caused major public uproar during the last decade has been the renewed and intensified waterfront development in and around Lake Balaton. As early as 2013, critics warned about the construction-friendly changes in the legislation.[20] A decade later the impact of legal and administrative changes, as well as financial incentives, are already visible in the form of an intensified utilization of waterfronts to serve the expanding tourism industry in Hungary.[21]

These tendencies are similar to the waterfront utilization practices of, for example, the Mediterranean countries, and perhaps more importantly continue the utilitarian and exploitative approach of state socialism when it comes to water bodies, albeit employing a nationalist narrative that had been developed during the latter decades of the Habsburg Empire and in the interwar period. The spirit of the past regarding ecological views and the Fidesz-led government does not stop with lucrative beachfront holidaymaking. Hungary's

Views about hunting clashed in 2021 when Budapest hosted the World Hunting and Nature Expo.

> The controversial attitudes of communists to the non-anthropogenic world filtered into contemporary Hungary.

vast agricultural areas, which were created through extensive river regulations and the subsequent irrigation projects of the 19th and 20th centuries, provide a large-scale playground for the paternalistic, nation-centered environmental narrative of today. The legacies of István Széchenyi, Pál Vásárhelyi and others who initiated the massive reclamation works have re-emerged since the 1980s. Thus, they were not initiated by Viktor Orbán; rather, the governing Fidesz party harnessed the already revived spirit of historicism. For example, the ecologically destructive river regulations of Hungary were framed as the "Second Hungarian Conquest of the Carpathian Basin" during the interwar period. This nation-centered narrative was reframed and dormant under socialism, only to be revived in the late 1980s and early 1990s. At the time, Miklós Kozák (among others), head of the Institute of Hydraulic Engineering at the Budapest University of Technology and Economics, helped to revive the theory about the "Second Hungarian Conquest of the Carpathian Basin", for example, in the prestigious *Vízügyi Közlemények* academic journal. In 1991, Kozák mixed ideas from the Habsburg, nationalist interwar and state-socialist periods and suggested that strong environmental control combined with the leading role of the state would contribute to the establishment of Hungarian national dominance over the central floodplains of the Danube and Tisza Rivers, and therefore, modern Hungary. According to Kozák, without the mastery of nature, the former area of the Kingdom of Hungary would be in a "terrible" and "severe" economic and social state.[22]

Conclusion

This paper aimed to reevaluate some of the environmental ideologies, toolkits and methods of the Orbán regime. These are often perceived as new, self-proclaimed and "illiberal". However, in this paper I aimed to connect some of them to their roots via the science of previous political periods both in Hungary and globally. This, I hope, will enable the reader to place Orbán's environmental actions in a wider perspective and gain a deeper understanding of what has been done to the environment in Hungary – and why it has been done – since 2010.

This paper argued that the controversial attitudes of communists to the non-anthropogenic world filtered into contemporary Hungary and, to make contemporary government attitudes toward the environment more complex, several aspects of the pre-existing ecological discourses of the Habsburg and interwar periods have been recycled, often with the associated nationalist, xenophobic and racial connotations of the non-human world.

Thus, the socialist environmental ideas of coexistence between society and nature, combined with the paternalistic and nationalist view of control, toppled with the technocratic socialist view to alter the non-human, have all been transferred to the post-2010 illiberal period. This somewhat cacophonic mixture of environmental ideologies should perhaps be interpreted as the long-term continuation or recirculation of ideas about human-nature relations. Thus, the state-orchestrated modernization and the "heroic simplification" efforts of the state would appear to have not been invented by Viktor Orbán, but started taking shape in Hungary from the end of the 18th century.

Also, the major themes and narratives of ongoing ecological engineering and the modification of Hungary, which critics have attributed to Orbán, have overlapped the political periods. Issues of nature conservation, such as the exploitation of forests and water bodies, have been proposed by political regimes in the past two centuries in Hungary, regardless of their leaning to the left or to the right. Thus, many of the contemporary econo-political ideas related to forestry, hydrology and other types of human-nature coexistence are fundamentally connected to earlier periods of Hungarian history, on the one hand via nationalism and paternalism, and on the other hand, with socialist paternalistic conservation.

Arguments of the past have been recycled, and they currently influence the notions and the concepts that illiberals raise in legislation, economic and environmental policies, as well as the political discourse. It is perhaps important

to point out that many of these recycled ideas have a central motive: to provide additional financial benefits to selected groups via the intensification of natural resource use. Thus, for Orbán illiberal environmentalism or not, the ecological changes his administration facilitate must pay. ●

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Kazakhstan

Toward a Green *and* Extractivist Future?

The Soviet and Post-Soviet Environmental Legacy, Fossil Economy and Ecological Activism in a Changing Kazakhstan

by **Marc Elie**

Kazakhstan is a young state that emerged from the collapsed Soviet Union in 1991. Led until 2019 by autocrat Nur-Sultan Nazarbaev, since then Kazakhstan has entered a new phase in its history, characterized by a strong social demand for democracy and a reformist president, Kassym-Zhormat Tokaev.

Kazakhstan, a landlocked country five times the size of France, situated between Russia to the north and the rest of Central Asia to the south, faces considerable environmental challenges, which can be analyzed in two blocks. First, Moscow treated the territory of Soviet Kazakhstan as an experimental field for military, industrial and agricultural projects. Independent Kazakhstan thus inherited terrible environmental disasters whose legacies are still felt. Second, Kazakhstan has deepened the extractive tendencies acquired in Soviet times. It has become essentially a producer and exporter of natural resources, whether raw or transformed, with major positions in oil, uranium, and wheat. While extractivism brought huge wealth to the elite loyal to Nazarbaev and some economic betterment to the rest of the population until the oil price slump of 2014, it has also created many long-term and worrying environmental and health issues.

The new government under Tokaev has recognized several of these issues and is taking steps toward a green economy, while still prioritizing extraction. Tokaev has introduced significant institutional changes in addressing ecological concerns. It may be too early to assess how they can modify environmental practices, attitudes, and activism. To help understand how Kazakhstan's environment stands nowadays and where it is

Almaty. View of thermal power station #3 and Tian-Shan mountains.
PHOTO: UNDP KAZAKHSTAN/ALEXEY MALCHENKO

headed, this review will tackle the following questions:

- Kazakhstan was diagnosed as the former Soviet republic of Central Asia with the gravest environmental legacy from Soviet industrialization.[1] Thirty years later, have the Kazakhs coped with the destruction and pollution passed on from the Soviet period?
- Kazakhstan is notorious for its subdued civil society and for police and legal repression against activists. However, new political spaces have opened since 2019, and the government insists it is working with civil society to green the country. Has green activism been revived?
- Kazakhstan is an extractive economy in which the energy sector plays a disproportionate role that slows down development in other branches (known as "Dutch Disease"). As long as oil extraction and export remain the country's main source of revenue, can official declarations on renewable energy become reality? Can promises of a green economy be realized?

Enduring Legacies of Disaster

When Kazakhstan gained its independence from the Soviet Union at the end of 1991, it inherited a legacy of major environmental disasters from the disappearing empire. The second Soviet republic by area, but the least densely settled, Kazakhstan had become the most urbanized country in Central Asia (58%) and the third most industrialized of the 15 Soviet republics.[2]

These indicators of "modernity" came at immense human and environmental costs: Kazakhstan was the most transformed of the Central Asian republics. Forced collectivization and sedentarization of Kazakh nomads brought

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The Soyuz launch pad, Gagarin's Start, is seen prior to the rollout of the Soyuz TMA-13 spacecraft at the Baikonur Cosmodrome in Kazakhstan, October 10, 2008.

PHOTO: WIKIMEDIA COMMONS

about a famine that decimated the population at the turn of the 1930s: of approximately 4 million Kazakhs almost half (1,840,000) died or fled Kazakhstan.[3] From then Kazakhstan was considered a "clean slate" for transformative experiments and projects. Joseph Stalin chose Kazakhstan as a major site to use one million exiles and hundreds of thousands Gulag prisoners in farming and mining. In 1949, the Eastern Kazakh steppes hosted the main Soviet nuclear test site at Semipalatinsk. After Stalin, in 1954, Nikita Khrushchev launched his "Virgin Lands Program" of wheat plantations, half of which were in Kazakhstan's northern steppes, for which he sent out hundreds of thousands of settlers. In 1955 the southern steppes were selected as a launchpad for intercontinental ballistic missiles: Baikonur was soon extended to become the main Soviet and Russian cosmodrome. Massive irrigation schemes were unleashed along the Syr Darya River to the Aral Sea. In the last decades of Soviet socialism, oil, gas, and mineral ore extraction and chemical and metallurgical industries developed at a rapid pace. When the Soviet Union launched a massive program of biological and chemical weapons in the 1970s, Kazakhstan was again selected as a central site.[4]

Thus, three developments created considerable environmental and health problems for the young Kazakh state: agricultural transformist projects, nuclear military and civil activities, and fossil fuel and mineral ore extraction and processing. Notwithstanding some successes in taming these disasters, it is fair to say that these legacies still haunt Kazakhstan today.

Nuclear Life in a Non-Nuclear State

The most salient problem concerns the "Semipalatinsk Polygon" in eastern Kazakhstan where the Soviet military tested hundreds of nuclear warheads, including its first atomic and first thermonuclear bombs in 1949 and 1953. One hundred and eighteen explosions occurred on or above the site until the Limited Test Ban Treaty of 1963 exiled tests to the underground. Occupying approximately 19,000 square kilometers, the test site had no clear boundaries and overlapped with pastures and lands of collective and state farms.[5] The surrounding villages and cities were exposed to high levels of radioactive contamination during several decades.[6] Health studies of the fallout consequences were conducted under conditions of strict military secrecy so that most inhabitants were unaware of their level of exposure and

were unable to link their ailments to radioactivity from the tests.[7]

A potent environmental movement led by writer Olzhas Sulemeinov helped raise awareness of radiation contamination. Teaming up with US anti-nuclear activists, Kazakh ecologists built the Nevada-Semipalatinsk movement to demand the end of tests.[8] They were halted in 1989 and the site was closed in 1991. Nevada-Semipalatinsk helped Kazakhs structure their demand for national sovereignty. The first government of independent Kazakhstan passed a law "On the social protection of citizens who suffered from nuclear tests at the Semipalatinsk nuclear test site" in 1992. It recognized that inhabitants had suffered, and compensation should be paid in form of lump payments and advantages (*l'goty*). But no adequate measure was taken to ensure their safety and the law was poorly enforced, especially in rural communities.[9]

Post-Soviet Kazakhstan under President Nazarbayev struck a deal with the US to adhere to the Treaty on the Non-Proliferation of Nuclear Weapons. On the international stage, Nazarbaev made the most out of the country's status as a nuclear weapon-freed country. At the same time, Kazakhstan became the world leader in uranium mining, exploiting 13 sites producing some 20,000 tons of uranium yearly. Thus, Kazakhstan hails both the end of the tests and removal of nuclear warheads (non-proliferation) and its status as the largest uranium exporter. Nazarbaev skillfully navigated the delineations of what counts as bad nuclear and as good nuclear (a variation of what Gabrielle Hecht called "nuclearity") in global nuclear governance.[10]

But this balancing act is challenged now that President Tokaev announced that a nuclear power plant is needed in the next decade to help remove coal from the energy mix. The return of nuclear energy is a huge challenge for Kazakhstan, both in relationship to its traumatic military test past, and to Russia who is competing along with other countries to build the plant.[11] Given the extension of uranium extraction and transformation in Kazakhstan, radiation exposure is a serious health issue in the Qyzylorda, East Kazakhstan and North Kazakhstan regions: air contamination with radon, a carcinogenic gas, and food contamination via other uranium isotopes concern both workers and residents.[12]

Toxic Salts: A Partial Success

Residents of Aral'sk attribute their diseases, especially the respiratory and kidney conditions many of them endure, to the toxic winds and storms from the denuded bed of the regressing sea.[13] Another major disaster independent Kazakhstan was left to cope with was the desiccation of the Aral Sea, a once grandiose lake straddling the Uzbek-Kazakh border. The Syr Darya River is one of two main tributaries of the sea. It flows through Kazakhstan's Qyzylorda and Turkestan regions and its water is exploited for the irrigation of cotton and rice fields. The heavily polluted waters of the river transport a high density of dangerous chemicals (herbicides, pesticides, defoliants) and mineral fertilizers that sedimented at the bottom of the dying sea, only to be picked up by the winds. In the 1970s and 1980s insufficient water treatment facilities could not cope with the swarming pathogens; on the lower course of the river, polluted water provoked epidemics contaminating tens of thousands of inhabitants. Kidney, liver, and stomach diseases were endemic.[14]

From 1960 to 2011, the sea lost 85% of its area and 92% of its volume.[15] Heavily mineralized water raised the salinity of the sea ten times to devastating levels for the fishing business. The delta of the Syr Darya and its wet zones have disappeared; the climate has desertified, fauna and flora have grown poorer both at sea and around it; rich ecosystems that sustained the livelihood of the population are gone. Navigation between the north (Aral'sk) and south of the lake (Muynak, Uzbekistan) stopped in the 1980s, cutting off a major transport route.[16] Conditions did not improve after independence. Mass water withdrawal from the Syr Darya and Amu Darya continued, although at a lower rate, irrigation infrastructure degraded and public health deteriorated further.[17]

In the 1990s and 2000s, Danish activists of

"The heavily polluted waters of the river transport a high density of dangerous chemicals.

NGO Landsforeningen Levende Hav supported the catch and consumption of flounder, a fish well adapted to the sea's high salinity levels. The Danes helped inhabitants of Aral'sk found three NGOs: Aral Tenizi to organize a fishing cooperative, and Aral Aielderi and Kambala Balyk, which played a key role in sustaining fishers when the fish industry collapsed and living conditions were especially difficult. The organization of a small-scale fishery on democratic principles brought back hope to the inhabitants that their sea was not a waste pond but a nourishing and valuable ecosystem. The result was impressive: flounder was the most fished species in 2005–2009 and remained a stable source of protein even when falling salinity levels in the Small Sea allowed for the return of bream and roach at the turn of the 2010s.[18]

The Kazakh government under Nazarbaev cut off the northern part of the lake on Kazakh territory from the Uzbek side by building a dam and a dike at Kökaral with a loan from the World Bank. After completion in 2005, the Northern Sea filled up quickly, salinity levels fell and several freshwater fish species returned.[19] The Northern Sea has expanded 18%, which has led to a partial ecological restoration and some recovery of fishing activity. A second phase of the project that should further widen the sea and could bring it back to Aral'sk still needs approval.[20]

Cotton areas have returned to their Soviet level of around 120,000 hectares. Rice areas have been reduced by 15%, but yields have risen by 30%.[21] Thus, the two most water demanding cultures are still very much present on the Syr Darya. Water withdrawal for irrigation has significantly diminished, but the evolution from wasteful furrow systems to sprinkler and drip irrigation is slow.[22]

Erosion: The Untamed Threat

In the five northern regions of Kazakhstan, "Virgin Land" settlers transformed the steppe environment on 20 million hectares by plowing up the fertile soil and replacing natural pluriannual grass with wheat, barley, and other crops. The new landers, in efforts to fulfill the sowing and harvesting plan established in Moscow, extended the area under cultivation from year to year, reaching out into "marginal" lands, where topographic, hydrographic and pedologic conditions could not sustain cereals. Light-structure soils were plowed up over an enormous area in Pavlodar region. The results were reaped in the 1960s when dust storms ("black storms") brought the Virgin Land project to the brink of collapse, in a disaster recalling the North American Dust Bowl of the 1930s.[23]

Agronomists inspired by the Canadian experience found a way out of the crisis. Anti-erosive farming, including fallows, and a significant reduction in sowing areas under wheat at the turn of the 1970s brought relief. However, the ecological situation remained precarious. Wheat brought important bonuses to Soviet Kazakhstan and status as a major grain basket. After independence, the calls grew louder to limit cereal farming and return most of the land to range animal husbandry. Steppe ecologists and agronomists argue that meat farming could be more profitable, more respectful of the soils and more favorable to small tenancy than wheat. However, privatization has reproduced the Soviet model of very large farms and cereal cultivation.[24] Machinery and technologies have greatly evolved, but soil is degrading under fallows and cereal cultivation.[25] Under climate change, recurring droughts are already striking blows at Kazakhstan's agriculture, like in 2021–2022.[26]

Consequences of Extractivism

Kazakhstan's economy is fossil and extractive. The country is a major oil and coal exporter and oil is the greatest source of state revenue.[27] Its economy remains one of the most carbon-intensive and energy-intensive in the world. Burning oil, coal and gas accounts for 90% of electricity generation, a proportion unchanged since Soviet times. Over 70% of the country's power stations are still fired by coal, a most problematic energy source for the climate. The power stations are out of date and highly polluting. Because coal reserves are very important and inexpensive to mine, the incentive to move

Its economy remains one of the most carbon-intensive and energy-intensive in the world.

Open pit extraction of coal in Bogatyr quarry, Ekibastuz, Kazakhstan.
PHOTO: ALAMY

to other sources is low.[28] The government started a shift to gas-powered electricity generation and made first investments in solar and wind capacities in the 2010s. Nonetheless, although the potential for wind and solar energy is huge, renewables remain negligible in the Kazakh energy mix.[29] In this chapter I select a few issues which have stirred citizens' protests in recent years.

The Curse of the Blessing

Oil extraction has greatly expanded in post-Soviet Kazakhstan. With the help of foreign and domestic firms, Nazarbaev has put hydrocarbons at the heart of the economy. In 1992, he designated the Caspian Sea as a new promised land for oil exploration and drilling, a source of inexhaustible wealth for the newly independent nation.[30] The flagship project was the Kashagan offshore operation, entrusted in 2001 to Italian oil giant Eni, later joined by further transnational firms. Plagued by accidents, delays, corruption and cost explosion, exploitation of the oil field began in earnest only in 2016. The operations of the offshore and onshore facilities (the Bolashak Refinery) are highly polluting and pose grave dangers to ecosystems and human health in Atyrau City and region.[31] Gas flaring has been reduced but remains a huge source of air pollution.[32] Oil operations compete with domestic use of water and put pressure on tight water resources. Before the construction of wastewater treatment facilities the Bolashak Refinery dumped polluted waters directly into the municipal sewage system in Atyrau. Oil operations have killed sturgeon, birds and seals in the Caspian Sea, a formerly protected area. Since the launch of Kashagan, local and international activists have demanded that the oil operators respect environmental legislation and that the government enforce inspections and repression and close legislative loopholes.[33]

In the neighboring Aktobe region, local activists have helped raise the issue of water pollution in oil fields. In 2022 they motivated the Ministry of Energy to impose a temporary drilling ban on more than 130 oil wells operating on the Kokzhide sands, because of the pollution of precious underground water caused by the extraction process.[34] At the time of writing, however, drilling has resumed.[35]

Air Pollution and Waste Management

Kazakh cities are among the most polluted in the world. An industrial belt from Temir-Tau

> The code states that citizens' participation is central in building a green society.

and Karaganda in the west to Semipalatinsk and Ust'-Kamenogorsk to the east, including Ekibastuz and Pavlodar, concentrate many similar environmental problems. With the priority given to production above housing during Soviet times, highly dangerous and polluting industries were built right in the old city centers; or new cities grew around industrial sites. Citizens' protests shook Karaganda and Ust'-Kamenogorsk in the Perestroika years. However, they were unable to change the urban dominance of polluting industries. Today, particulate matter concentration and sulfur dioxide and nitrogen oxides concentrations in major Kazakh cities are very high and weakly regulated and controlled. Electrical power plants, many in private hands, account for the greater part of these emissions, followed by transport using outdated vehicles and unclean fuels and by fumes from households in the winter.[36]

Inhabitants of the most polluted cities are protesting the bad air quality, the impunity enjoyed by many polluters, and the lack of control from municipalities and state agencies. In Almaty, where average concentrations of fine particles in the air surpass by 3 to 8 times the levels recommended by the World Health Organization, ecological activists from "Chistyi vozdukh Almaty" (Clean Air for Almaty), HAQ and "Almaty Clean Air and Water Action" organize meetings and petitions to demand radical action against air pollution.[37]

The issue of waste management also raises environmental protests. In September 2021, activists circulated a petition to protest the construction of waste burning facilities in the six largest cities. They insist that burning waste is not an adequate solution to the waste issues (illegal dumping and burning), because it raises greenhouse gas emissions and pollutes the air with particulate matter and dangerous gases.[38] Furthermore, the firm entrusted with building the facilities belonged to the daughter of ex-President Nazarbaev, Aliya. In mass protests in January 2022, hundreds of thousands of citizens demanded that President Tokaev remove the grip of Nazarbaev and his family on the state and the economy. After that, the plan to build waste burning plants was scrapped in favor of a program of recycling facilities and Aliya Nazarbaeva left her shares in ecological projects.[39] This is, in the words of Vladislav Golyarko, who leads the ecological NGO "Generation" concerned with waste management, a "small victory for the environmental movement."[40]

Toward a Green Future?

2019 – An Environmental Turn?

Kazakhstan's government has embraced ambitious goals in the development of renewable energies and decarbonization of the economy. Kazakhstan has its own Emissions Trading System. The country ratified the Paris Climate Agreement of 2016 and presented its goals at the World Expo in 2017 in Astana. After the departure of Nazarbaev, Tokaev gave them more importance. At the same time, however, the government is not planning any change in its extractive priorities. The government sees no contradiction between decarbonizing the economy and extracting more oil and gas for export. This position is similar to that of many hydrocarbon-exporting countries. This separation recalls Nazarbaev's juxtaposition of Kazakhstan as a non-proliferating and decontaminated nation, on the one hand, and Kazakhstan as a reliable and record-holding uranium extraction and export nation, on the other.

In December 2020 President Tokaev announced that Kazakhstan aims at attaining carbon neutrality by 2060. The new climate doctrine entails, among other goals, stepping out of gas generation and coal combustion, the planting of trees, a doubling of renewables as sources of electricity, the sorting of all waste, the imposition of "sustainable agriculture" on three quarters of arable lands, and complete electrification of passenger transportation.

Under Tokaev, the legislature passed a new Environmental Code. It is too early to evaluate the impact of the new code, especially whether its provisions about the need to use the best available technology (BAT) in industry, and about ecological reparation by polluters, will work concretely. The code states that citizens' participation is central in building a green

society. But how to enforce this role remains unclear, given the tight controls on protest gatherings. Whether Tokaev's "listening state" can endure loud ecological opposition remains to be seen, as well as whether the state will act or just listen.

New Hope for Environmentalists

A paradox of environmentalism in Kazakhstan is that although the problems are huge, they don't appear as such in opinion polls. Although Kazakhstani often speaks of "ekologiia" (polluted environment) as a threat to their health and well-being, they rank economic and social difficulties far higher than ecological problems.[41] This ordering of priorities is not surprising in a country where income and capital inequalities are abysmal, and the economic situation has deteriorated for many after the oil slump of 2014. Among environmental issues, Kazakhs name air pollution, waste removal, and water quality as the most pressing.[42]

The political context sets conditions for the development of environmental activism in Kazakhstan as elsewhere. Nazarbaev's solidifying personal power in the second half of the 2000s – in 2007, he became president for life and head of the governing political party, Nur Otan—has created unfavorable conditions for the development of ecological activism in Kazakhstan. Given the authoritarian trend in politics, no nationwide environmental movement has emerged from the thematic organizations of the 1990s on the Aral and Semipalatinsk.[43]

In 2017, a review of 150 ecological NGOs in Kazakhstan showed that they had grown weaker in the previous ten years.[44] An important negative factor was the disbanding of the Ministry of Ecology in 2013–2014. Until 2019, when a competent ministry was reinstated, environmental protection at the state level was handed to production ministries: the Ministry of Agriculture and the Ministry of Energy. NGOs entered a deep financial crisis as state civil society tenders included fewer environmental topics. They were, furthermore, excluded from discussing law projects. Lastly, the government made an effort to replace them with GONGOs, misusing the Aarhus Convention on citizens' participation in environmental matters to establish fake organizations (so-called Aarhus Centers). Poorly connected to international NGOs and international organizations, a mere 30 ecological organizations struggle to survive.[45] Ecological activists are regularly harassed by the police and fined. Even non-confrontational NGOs cannot count on financial help from the state and must rely on foreign grants.[46]

Since 2019, with the change of presidents, political life in Kazakhstan has become more open. President Tokaev has enacted a new, liberal-minded law on NGOs and civil society has taken advantage of the new opportunities, with environmental protests becoming more numerous. At the end of 2022, a green party called Baitak emerged among several new political parties. However, in the March 2023 parliamentary elections, Baitak only managed to win 2.3% of the votes with a program supporting the hunting of the critically endangered saiga antelope and the construction of a nuclear power plant. This surprising platform for a green party forced activists to join other parties.[47] Nevertheless, the reinstatement of a Ministry of Ecology and the adoption of a new Environmental Code and Climate Doctrine are positive signs. Activists are eagerly awaiting the implementation and enforcement of the new laws, as corruption often renders even the best-intended laws impossible to realize, as they have experienced in many situations.[48]

Conclusion

The ecological situation in Kazakhstan remains concerning. Both the unresolved legacies of Soviet environmental destruction and new problems linked to resource extraction and urbanization put ecosystems and public health under heavy stress.

The accession of Tokaev to the presidency in 2019 and the removal of Nazarbayev's influence in 2022 have raised hopes for Kazakhstan's civil society. The new government has made the construction of a green economy and society a priority in both declaration and legislation. Not only has it set a goal to achieve carbon neutral-

ity by 2060, it has laid out a climate doctrine to realize this objective. It has also recognized the importance of citizens' autonomous activism in advancing the ecological agenda. These are promising developments.

It remains to be seen if these good intentions can be realized in Kazakhstan's economic and political context. The first obstacle is the autocratic legacy from Nazarbaev's 30-year reign. Whether his successor Tokaev is willing to and capable of transforming the autocratic system into a democracy with free elections, free media reporting and autonomous citizen participation is still undecided, a year after the mass protests that have proven Kazakh society's longing for democratization. The experience of many countries shows that those are key conditions for an efficient ecological movement, including nationwide NGOs and political parties, to establish itself.

Kazakhstan's economic choices and path dependencies are a second key obstacle toward conserving the environment and human health. Kazakhstan remains firmly engaged on the extractive path of economic development. It can probably live with the contradiction of exporting record amounts of uranium, coal, oil, copper and wheat, and building a carbon-neutral domestic economy. But Kazakhstan has a carbon-intense economy. How the very ambitious plans of the government for renewables can be practically implemented is not easy to grasp. The choice of nuclear energy to fill the gap in the electricity grid is bound to be contested.

Last, Kazakhstan faces ecological issues that go beyond carbon intensity and climate change. Air pollution and waste management, irrigation and soil exhaustion, aging and crumbling vital infrastructure, and public health in contaminated regions are pressing socio-ecological issues that carbon neutrality alone cannot address. Although the government acknowledges them to some extent, they have been at the lower end of the priority list for decades, far behind the massive energy infrastructure projects. They run a significant risk of going unattended.

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Latvia

Sustainability and Adaptability of Food Systems

by **Mikelis Grivins**

Food, or to be more precise, agro-food systems, are one of the sources of the pressing environmental challenges the modern world is facing. They are one of the key emitters of GHG (Greenhouse Gas),[1] a source of ecosystem failure,[2] land depletion,[3] eutrophication etc. It has been known for decades that food systems need to change. However, while substantial resources have been targeted to facilitate a shift toward more sustainable food production and consumption, real changes have been less evident. The impact of attempts to use the EU CAP (EU Common Agriculture Policy) to mitigate these issues has been largely met with skepticism.

The context of the expected shift varies greatly across the various regions of Europe. While there are market and policy-initiated similarities (such as the pressure for farms to grow, or policy support for the transition), there are differences resulting from the historical trajectories and cultural nuances that manifest in particular diets, links that the general population maintains with production, farming and rurality, as well as interaction with the surrounding environment. While the general differences in the capacity to change across the EU have mainly been discussed in the context of the supply chain structure and systemic vulnerabilities, there are also very real (yet significantly less explored) differences in the capacity of these local systems to change. In the context of post-Soviet countries, these differences have been mainly associated with the strong food-sharing culture, the high number of small farms and the prevalence of foraging, etc. This article focuses on Latvia, one country in the Baltic Sea region. It does so to systematically explore the change capacity locked in one food system. The article raises the following question – if food systems are to become more sustainable – where will the spark for change (or the fuel that supports the change) come from?

In order to investigate this question, the article delves into an analysis of statistical and secondary data and illuminates the peculiarities of the Latvian food system, showing the challenges that the system is facing. Although the article primarily focuses on Latvia's food system, it consistently compares the data from processes in neighboring countries and in the space of post-Soviet countries in general. Food systems cannot be considered sustainable if they result in poorer health in the population – a claim that is well addressed by Willett et al.[4] This is why the article also addresses the sustainability transition by looking at environmental, economic, social and health dimensions. The article engages in this analysis by discussing consumer preferences, general food culture, food availability and finally – the organizational capacity of systems to change.

Factors Affecting Consumption

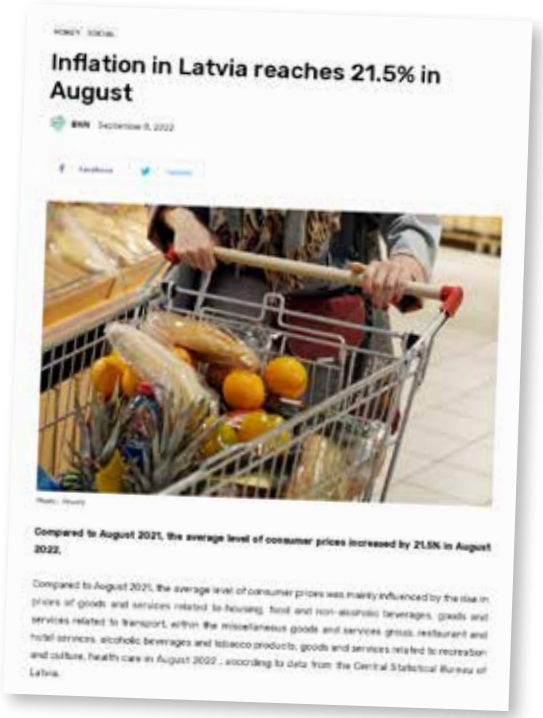
While the turmoil and crises (such as COVID-19 and the war in Ukraine) of the last couple of years have facilitated shifts in how households spend their money, the overall structure of household expenditure across EU member states has been relatively stable. While in the EU (27), households spent an average of 11.8% of their income on food in 2019, the proportion was consistently higher among those states that joined the EU in 2014 or later – in Latvia 16.4%, Lithuania 18.8% and Estonia 17.8%, to name a few.[5] This indicator, of course, differs across the respective regions of these countries. This can be seen when considering the urban and rural areas of these countries. Rural inhabitants generally allocate a much higher proportion of their income to buying food.

In Latvia, the high proportion of household income spent on food has led to significant consumer price sensitivity. Consequently, the main factor that is taken into account when buying food is price. Eurobarometer survey conduced in 2019 asked respondents the following questions: "When you buy food, which of the following are the most important to you? Firstly? And then?" The respondents were given the option to name three main factors. When the three main factors were summarized, in all three Baltic states, price emerged as the dominant factor – in Latvia it was named by 63% of respondents, in Lithuania by 65% and in Estonia by 62%.[6] This phenomenon is not new. The strong emphasis that inhabitants of the Baltic States (and the new entrant countries in general) place on price has been illustrated in several surveys conducted in recent decades.[7] Not surprisingly, a representative survey conducted in Latvia in 2019 concluded that among the typically vulnerable groups (such as elderly people and unemployed people with a low level of education and a low income), the significance of price is even higher.[8] The second and third items that consumers in the three countries look for in food products differ and there are also some discrepancies across surveys. However, it could be cautiously suggested that all three countries are concerned about the quality of foodstuffs[9] (in Lithuania and Estonia it is more about how a product taste), while in Latvia it is more about food safety.[10] Consumers representing Latvia and Estonia are also heavily oriented toward the origin of the product[11] (a study conducted in Latvia illustrates that the local origin of a product is one of the key concerns of consumers).[12]

No doubt, in recent decades, the financial capability of households in Latvia has grown. However, as illustrated by the harmonized indices of consumer prices, food prices across the three Baltic States have grown significantly more quickly compared to the EU on average (again, a trend shared by most post-Soviet countries that have joined the EU). The products responsible for this increase differ across the three countries (with exceptions in which all three countries show a price increase that significantly outpaces the average, being "Fresh or chilled vegetables other than potatoes and other tubers" and "Potatoes").[13] Also, the recent disruption has influenced price sensitivity.

This enables us to explain the sustained price sensitivity of the population and – as has been hinted by a number of food system actors representing the region – makes it challenging for local food producers to place high added

> Food systems cannot be considered sustainable if they result in poorer health in the population.


Inflation in Latvia reaches 21.5% in August

Compared to August 2021, the average level of consumer prices increased by 21.5% in August 2022.

Compared to August 2021, the average level of consumer prices was mainly influenced by the rise in prices of goods and services related to housing, food and non-alcoholic beverages, goods and services related to transport, within the miscellaneous goods and services group, restaurant and hotel services, alcoholic beverages and tobacco products, goods and services related to recreation and culture, health care in August 2022 , according to data from the Central Statistical Bureau of Latvia.

Baltic News Network reports on the increasing inflation in Latvia: May 2022 (13%) and September 2022 (21,5%).

value products in the market (high quality products and products with a low environmental impact). In Latvia, while consumer interest in products that might have less of an environmental impact has been growing, this interest is barely visible when changes in product choice are assessed.[14] It is also worth mentioning that the post-Soviet countries have witnessed substantial depopulation (caused both by a negative birth rate and outmigration) over the last three decades.[15] This has left rural areas with a very low population density which, in turn, makes it difficult for local enterprises producing high-value foodstuffs to find a foothold in local markets. The squeeze that has emerged out of consumers' inability and unwillingness to pay extra, and the overall shrinking local markets in general, has resulted in only limited opportunities for consumers to use their wallets to initiate a transition to more sustainable food systems.

Eating Habits

Despite price being the main factor affecting consumers' choice of food products in the Baltic States, it should not be regarded as clear evidence that people will eat unhealthily and/or irresponsibly. While it has been demonstrated that very few people have changed their products of choice to more environmentally friendly alternatives, it was also demonstrated that the quality of a product is one of the main factors to influence consumer choices. It has also been demonstrated that there is evidence of a growing concern regarding the environmental performance of consumed food. It can therefore be assumed that despite price sensitivity, there may be attempts to shift toward healthier and possibly even environmentally-friendly meals. This would require more planning on the part of consumers and recognition of the need to make conscious and targeted decisions that would allow them to achieve their goals, while also being cost-effective. Unfortunately, this is only hypothetically true and data from Latvia illustrate that substantial health and environment-related issues are emerging from consumers' daily diets.

The spread of food-related non-communicable diseases has been a major concern in Europe for some time now (the spread of obesity is at the center of this concern).[16] Once again, the Baltic States and the post-Soviet countries in general are witnessing a higher level of obesity (while the average level of

obesity in the EU is around 16%, in Latvia and Estonia it exceeds 20%).[17] The spread of obesity is not just related to diets; it is a reflection of the unhealthy lifestyle habits adopted by many of the inhabitants of these countries. One of the main consequences of the obesity trend is the high rate of mortality caused by diseases of the circulatory system, which are especially high in post-Soviet countries and in the three Baltic States in particular.[18] Clearly, food choices are posing some serious health challenges in these countries.

A study conducted in Latvia asked the respondents to assess the healthiness of their eating habits. 40% of the respondents stated that they had unhealthy eating habits. The same study also asked the respondents to express their opinion about who should be responsible for ensuring that consumers choose food that is more healthy and environmentally friendly. 48% of the respondents indicated that it was the consumers' responsibility. However, only around 35% of Latvian consumers have attempted to change their consumption habits. Furthermore, only 12% claim that they have started to eat more healthy food over the last year and less than 4% stated that they have started to choose more environmentally-friendly products over the last 12 months.[19]

This rather limited attempt to improve the healthiness of eating habits has also been highlighted by other studies. A comparative pan-European study focusing on adolescent health suggests that not skipping breakfast, eating fruits and vegetables, and having family meals reduce the prevalence of non-communicable diseases. Unfortunately, fewer younger people are following these recommendations.[20] This trend is being felt even more strongly in Latvia, where several school-aged children are dropping healthy eating habits at an even quicker pace (it has been reported that a higher number of school-aged children are skipping meals).[21] However, there is also data that illustrate positive trends – the number of children eating fruits and vegetables is increasing while at the same time Latvian children are consuming less sugar-sweetened soft drinks.[22] Those positive changes can be traced to particular policy initiatives rather than individual choices.

Thus, while a substantial part of the population recognizes that there are problems with what they eat and many people have tried to change their eating habits, only some of them have managed to make positive changes on their own. This raises the following question: are there any other barriers that limit their ability to make these changes, apart from cost? A set of focus groups in Latvia offers some answers to this question. In 2020, researchers from the Baltic Studies Centre conducted three focus groups to discuss how people choose the products they eat, what diets they follow, their attitudes toward environmentally-friendly products and how well-informed they are about food-related issues.

The discussions revealed that consumers, while keen on referring to concepts often used in the media and elsewhere to describe diets and foodstuffs, struggle with the meaning of these concepts. The respondents struggled to describe what might be healthy for them and engaged in very abstract discussions about balancing their diets. A number of respondents used words such as vegetarian or vegan to describe their food choices. However, having become more immersed in the debate, it was revealed that many of the self-described vegetarians were open to eating virtually anything. Even respondents who stated that they were very interested in the various issues related to food, struggled to discuss issues related to sustainability and what exactly this means to them. This reveals that individuals struggle when it comes to structurally reflecting on what they should eat. Also, in addition to knowledge-related problems, the respondents highlighted the structural issues that affected their food choices. An attempt to change diet is not something an individual will do on their own. Such a decision affects the entire household and must therefore be negotiated with all members of the household.

It can be concluded that there are clearly problems with what people eat – in terms of how healthy and how environmentally friendly their choices are. However, people might strug-

Only around 35% of Latvian consumers have attempted to change their consumption habits.

Food industry in Latvia.
PHOTO: LATVIJAS TELEVĪZIJA

gle to change their habits. The cost of changing eating habits is an important factor. However, there are knowledge deficiencies and further structural limitations that limit the consumer's ability to change. This means that any change in consumption habits will have to come from a different direction.

Food Availability

While consumer price sensitivity has remained unchanged in recent decades, food systems and food supply chains have been subject to a complete restructuring during the same period. The untrustworthiness of the supply chains that were built under the planned economy maintained by the Soviet Union explains why communities across the Soviet Union invested in the development of alternative supply channels.[23] The dependency of Soviet citizens on informal supply chains to obtain food via small-scale farming, foraging and allotment gardens has been well documented. In this context, the urban labor force was moving to rural areas while bringing self-produced food to urban areas, consequently strengthening rural-urban linkages. The same trend also ensured the prominence of wholesale markets, as well as the role of farmers. The unique aspect of these practices is that they have never been locked in organization models (and it is therefore difficult to apply supply chain thinking to them). It meant that in these informal supply chains, it was never possible to introduce any official quality safeguards (in any case, with the low level of trust in public institutions, it may have been a futile exercise). Yet, very short supply chains resulted in the high traceability of products and most likely facilitated the emergence of a high level of trust in farmers, which can be observed in the Baltic States to this day.

Food sharing is celebrated by food researchers from Central and Eastern Europe as an alternative to the market economy – a clear remnant of a time when food was much more than a source of nutrition, but also an element of social bonding. Researchers have claimed that the tradition of food sharing in the region is still alive and could be used as a means of rethinking contemporary food systems.[24] While evidence regarding the amount of food that is shared differs from one study to the next, Latvia's official statistics suggest that the proportion of shared food has increased in recent years. Having said that, the same statistics indicate that there has been a decrease in self-produced food.[25]

30 years of a market economy has substantially changed the landscape regarding what is available and where people are looking for

food. This process can be easily illustrated by a couple of indicators. The turnover and volume of sales in wholesale and retail (focusing on the retail sale of food, beverages and tobacco) across the three Baltic States have grown significantly more quickly than the average in the EU, sometimes demonstrating a level of growth that exceeds the EU average by more than 10 times.[26] The same trend can also be seen in both the impressive growth and the predicted growth in the retail sales area per capita.[27]

Self-provision remains a way that some households access food. It has been reported that in 2019 in Latvia, around 10% of all food consumed was self-provided in households (the proportion decreased slightly in recent years).[28] However, the proportion has substantially fluctuated across different product groups. Around on-third of vegetables that households consume were obtained free of charge (either grown or as a gift from friends), while only 7% of egg and milk products were obtained in the same way. Not surprisingly, the proportion of self-provided food differs between urban and rural areas: in rural areas the proportion is almost 18%, while in the capital it is below 6%. Although this figure is impressive, it only covers a marginal part of the consumer's diet. Researchers seem to agree that when discussing the food systems of post-Soviet countries, alternative food sources such as self-provisioning,[29] food sharing[30] and foraging[31] should be taken into account. Jehlicka and other researchers[32] have titled the practice *quiet sustainability*, referring to its potential impact on sustainability, as well as to the challenges that the dominant theoretical framings of supply chains might encounter in capturing the significance of these practices.

While there is an urgent need to engage with these practices and assess their potential in supporting the transition to sustainable and regenerative food systems, there is also a need to reassess their true role in food systems. In reports that discuss self-subsistence, the products consumed by households usually play an insignificant role in their daily diets. Also, data illustrate that the number of small farms in the region is decreasing.[33] There have also been suggestions that the diversity of foraged products is decreasing and that the consumption of wild products is valued for its role in shaping identities rather than for the products it delivers to the table. It has also been noted that farms are centralizing and gradually becoming larger.[34]

We can conclude that food systems have changed, and new practices and organizations are at the center of these new systems. The traditional systems seem to be fading, which raises a clinical question: are the unique food supply systems still there and what is their current relevance? The answer is that it is likely that, without additional support, traditional systems will have little scope to be part of the transition. Thus, it could be that we have lost the opportunity to use the properties of traditional systems to facilitate the transition. Consequently, we should take a closer look at the opportunities offered by the new systems.

Organizational Capacity to Change

If the traditional supply chains are struggling to lead the change, this raises the following question: is there sufficient capacity in the systems that have replaced traditional practices? This question should probably be divided into two parts – how effective are the new alternative initiatives in facilitating a transition that focuses on the change in food systems that is emerging across the region? Also, can we expect any change by the major actors (retailers, processors, and manufacturers) that are now dominating the supply chain? There is little data or analyses on this issue. Thus, most of the knowledge about this issue is merely data-based speculation.

Promising novel food initiatives have been emerging (both as non-profit activities and as small and medium-sized enterprises) in Latvia. Direct purchase groups have been flourishing over the last decade, inspiring commercial alternatives. The groups are reestablishing linkages between farmers and urban inhabitants and adding a dimension that is focusing on farming practices, care, and trust.[35] While the non-commercial groups have proven to be

> In Latvia, around 10% of all food consumed was self-provided in households.

> Major grain producers are attracting funding to introduce organic product lines.

a success, their reach remains limited. In terms of consumers, they have attracted groups of consumers who are looking for experiences and products offered by these networks and have recently shown no capacity for additional growth. Also, there have been discussions questioning the potential of these groups to generate a noteworthy income for farmers. Finally, the commercial alternatives to non-commercial groups have struggled to overcome the consumers' unwillingness to pay on the one hand, and the challenges posed by the size of the market in which they are operating, on the other. There have also been attempts to develop databases that allow consumers to directly reach out to farmers. While having substantial potential, these attempts have failed to have any real impact. The activities have been able to be maintained mainly due to public funding.

In recent decades, Latvia has seen the emergence of farmers' markets, some of which have proven to be incredibly resilient in showing an ability to withstand various crises. Nevertheless, none of these markets have managed to transform into markets that would guarantee daily trade. It is therefore most likely that the importance of these markets, when considered from the perspective of their significance on the daily meals of consumers, is limited. They primarily remain as outlets that supports small food producers that focus on niche products. Furthermore, these markets have been accused of gentrification.[36] Consequently, their impact is most likely limited.

For most of the initiatives we have considered here, their social, economic, and environmental impact is limited. Nor do they generate substantial economic gains for farmers or play a significant role in terms of the consumer's plate. This raises the following question: are the major food system actors doing any better? There are indications that they might be more effective in addressing climate and other issues that are encapsulated in food systems. A couple of examples of successful large-scale initiatives include the following: one of the largest retail chains that has pledged to only sell eggs produced by free-range chickens has transformed the egg sector in Latvia; or an initiative in the larger malls of the same retail chain to offer a partner chain that only focuses on local produce, effectively raising sales for small local producers. Also, there is evidence that major grain producers are attracting funding to introduce organic product lines. Similar initiatives have also been noted in the dairy, potato, meat, and other sectors. In these cases, outlet channels have supported local organic producers searching for outlets for their products and have ensured a large-scale shift. Nevertheless, the true environmental, social, or economic impact of these activities has not been measured.

New alternative supply chains have been emerging. However, thus far they have struggled to remain profitable or introduce large-scale change. Meanwhile, large scale enterprises have a transformative potential to initiate change that is enduring and that can create an impact. However, the question remains: what motivates large enterprises that hold significant market power to change? The response that it is simply a manifestation of goodwill might be considered naïve.

Conclusions

The need to transform food systems is becoming ever more urgent. It is clear that the scope of the change that needs to be introduced will affect all actors who operate in food systems. However, while the change needs to be systemic, it is not always clear where it should start. It is almost as if most stakeholders are waiting and pointing fingers at each other. This might seem strange considering that the impending crises will affect everyone. This article raises the question of what can be expected of the actors operating in the food systems. The article illustrates that there is little motivation and resources – both internal and external – to change. The data seem to suggest that between both consumers and entrepreneurs there is only limited interest in the opportunity to initiate a transition toward more sustainable food systems. And, even in cases where there *is* interest in facilitating the transition, there is reason to believe that there would be structural challenges that would limit the capacity to change. Thus, while we know

that there is an overall need to change, there are limitations in who can initiate such a change.

Some researchers suggest that traditional systems might still exist in Central and Eastern Europe. While there is evidence that these traditional systems still have potential, their scope might be too narrow to serve as a launch pad for change. Also, there is evidence to suggest that traditional practices are vanishing and, without additional support, might disappear completely. So, while there is an interesting phenomenon that should be observed and documented and which could generate the knowledge needed to initiate change – without additional support, its ability to ignite the transition is limited.

One might also look for a spark among the initiatives that represent AFNs. No doubt there are several great examples of local activism and attempts to restructure the practices and power balance in the supply chain. Nevertheless, the question should be asked regarding how strong these initiatives are and whether they can withstand the turmoil and disruptions that food systems are facing. The likely answer is that the initiatives are vulnerable and, with most consumers still being very focused on the cheapest products, are also in a need of support.

This leaves us with major enterprises engaging in projects that are aligned with the overall ethos of change. It is difficult to figure out the precise motivation that initiated their interest in alternatives. Still, it is clear that the availability of public funds supporting the transition was an important factor for them. Furthermore, it seems that while national-level processes have a limited impact, international trade might have a more direct impact. This leaves us with the conclusion that policymakers have a key role to play in the transition and, consequently, they must find the motivation to support the shift. Thus, while we might expect that the understanding of the imminent threat by market powers or systems will spark the shift – as this article illustrates – it might be mere speculation to expect this if additional help is not available from the outside – from the actors regulating the sector.

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Exploring the Steps Towards a Post-Socialist Sustainable Space

by **Justyna Chodkowska-Miszczuk**

In line with the claim of Aron that *"people are always immersed in history",*[1] when we analyze Poland's current geopolitical, economic and socio-cultural situation in the context of growing global challenges, we should bear in mind that the roots of the current situation go much further back than the second half of the 20th century, i.e., the socialist era. This situation also applies to the changes related to implementing sustainable development. Thus, this work aims to reflect on the role and essence of historical issues in the transformation of a post-socialist country – Poland – toward sustainability. The work particularly focuses on rural areas that may have experienced marginalization and pauperization due to the changes in globalization. The paper is characterized by three main counterpoints. The first part of the work discusses historical conditions dating back to the turn of the 19th and 20th centuries, which resonate with contemporary challenges. The transformation at the end of the 20th century and the accompanying related challenges are then presented, including the preservation of nature, which is unique on both a European and a global level. The third part of the work refers to the transformations in the 21st century, for example, the energy transition, building energy security, and local resilience.

Let's Start with the History

It is impossible to understand the pace and scope of Poland's ongoing transformation without being aware of the impact of other historical factors, which undoubtedly include the partitioning of Poland between three different states, Prussia, Austria, and Russia, which occurred in the late 18th century. For more than 120 years, until the beginning of the 20th century, Polish lands were peripheral areas of the partitioning states and constituted a kind of buffer zone between industrial and agricultural Europe.[2] Today, the effects of this manifest in the structure of the economy, but also in cultural and social

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A post-SAF village. Poland; 2018.

PHOTO: J. CHODKOWSKA-MISZCZUK

divisions. Until recently, Poland was divided in the popular consciousness, which distinguished between its better and worse parts, namely: A and B (A – lands that were part of the Prussian partition, B – lands that were part of the other two partitions), or even: Poland A, B, and C (A – lands that were part of the Prussian partition, B – lands that were part of the Austrian partition (so-called Galicia), C – lands that were part of the Russian partition). This stereotyping is particularly evident in the border areas of the various partitions, which nowadays are located in the Polish interior. The animosity that affects the frontier populations persists to this day in local cultures and societies, but also at economic and even political and administrative levels.[3] This animosity makes it difficult for local authorities and local actors to cooperate, to conduct joint projects, including key environmental investments.[4] The differences between the three partitioning states, which developed at a different pace, have also left a lasting mark on Poland's modern agriculture, which is now one of the pillars of the ecological transition. The farms in the Polish territories in the Prussian partition (western and northern Poland) were decidedly larger, more productive, and modern than the farms in the other two partitions. In the former Russian and Austrian territories, land reform arrived late and, more importantly, was implemented in a residual form.[5]

The division of Poland into three distinct areas was entrenched and even deepened during the period of real socialism that was introduced in Poland after the Second World War. It was an age characterized by an extremely non-ecological approach to socio-economic development.[6] The political, social, and economic reality of the age was the result of Soviet hegemony in Eastern and Central Europe. With the new regime that ruled Poland until 1989, central planning, hyper-industrialization and the collectivization of agriculture became the primary prerequisites to development.[7] The prevailing economic model, based on central planning to maximize production, did not take into account the environmental effects that resulted from huge industrial investments. These effects included the degradation of water, forest and soil resources, air pollution or a reduction of biodiversity. Furthermore, any pro-environmental activity carried negative connotations on a political level as such activity was unequivocally associated with "hostile, Western European capitalism". Hyper-industrialization, especially evident in terms of the development of the mining and steel industries, as well as agricultural activities on large-scale state farms, were the overarching objectives of the central government. Until the early 1980s, national coal production (and consumption) increased significantly. This was in order to build up the economic power of the regions that depended on the Soviet Union, which included streamlining the achievement objectives assigned to the individual Eastern Bloc countries, without addressing the growing environmental problems and closely related deteriorating quality of life of the inhabitants of

the mining regions in Poland, mainly Silesia.[8]

The socialist era meant a central plan for both industry and agriculture. After the Second World War, agriculture in northern and western Poland, in which relatively large farms already existed as a legacy of the era of partition, was intensively nationalized. The authorities started setting up state agricultural farms (SAFs) which, between 1945 and 1989, were the most common form of organization of large farms (with an area ranging from tens to tens of thousands of square kilometers). Housing estates created to meet the needs of employed workers were an integral part of SAFs. Morphologically and socially, they differed from traditional rural settlements, as their layout comprised apartment blocks (hitherto confined to cities). The settlements were a mosaic of inhabitants from different parts of the country who were unrelated to each other or their new place of residence.[9]

Currently, the post-state farm areas are struggling with various socio-economic issues. The ecological changes appear to be additional challenges rather than development opportunities, especially as the transformation period at the end of the 20th century brought structural unemployment, the decapitalization of state-owned assets accumulated by SAFs, and consequently, more social issues. The land that had been set aside, the existing but neglected infrastructure, as well as the farm buildings, needed to be developed. This was achieved through a process of chaotic and intensive restructuring and privatization. As a consequence of this process, in western and northern Poland, large farms, or rather agricultural enterprises, were set up, specializing in commercial and income-generating activities, expanding their area of activity and strengthening their market position and business relations.[10] They posed a certain threat to the future of the natural resources of these areas, as the development of intensive agriculture has significantly contributed to the loss of biodiversity and ecosystem services. On the second pole were the small, fragmented family farms of eastern and southern Poland which, alongside the large SAFs, remained in Poland throughout the socialist era. They were subjected to a policy of "repressive tolerance", which significantly affected their economic well-being, both then and now.[11] Limited access to means of production during the socialist era forced individual farmers to use their own resources, crop diversity, tree planting and other solutions to what we currently call *pro-environmental* and *ecological measures*. Nevertheless, it should be remembered that these farms did not stand a chance against the mechanized and large-scale SAFs. Their poor financial circumstances significantly limited their ability to compete in the market, exacerbated rural poverty and reduced the quality of life of rural communities. Consequently, Poland now has a wide range of farms. Large-scale agricultural enterprises dominate the western and northern parts of the country, while small farms dominate the eastern and southern parts. They differ in terms of size and access to resources, including human, social, and financial resources, as well as the opportunity to implement changes in agricultural activity. Modifying current practices toward the pro-environmental development of agriculture and rural areas requires systemic support, long-term policies, security guarantees in generating income differently (for instance, without well-known agricultural means), and place-based education. The contemporary understanding of the farmer's role is not limited to the private sphere and production functions but also means caring for and producing environmental public goods stored on farms. This completely different idea of the farmer's role is also associated with the need to contextualize public activities and adopt an inclusive approach to farmers by including them in decision-making processes concerning agriculture and, more broadly, rural areas.

A New Beginning?

These significant differences in Poland's economic potential, created and perpetuated over the years, determine the contemporary development and, above all, the effective transformation of the country as a whole. Among the most important environmental and ecological con-

> The ecological changes appear to be additional challenges rather than development opportunities.




The natural and cultural heritage of the Polesie Region, Eastern Poland.

PHOTO: J. CHODKOWSKA-MISZCZUK

sequences of the post-socialist legacy are: the devastation of environmentally (and agriculturally) valuable areas occupied by new industrial plants and settlement units, deforestation, loss of biodiversity, air and water pollution, and the degradation of the agrarian structure and agricultural resources. Like other countries, Poland has not avoided devastation processes at present times either. Industrial logging and the use of private forests as sources of domestic fuel are very worrying, for example, eastern Poland, which has the highest proportion of privately-owned forests. These forests are often primary sources of heat, i.e., wood, for their owners. The proportion of rural households using firewood in Poland is 63%, compared to 71.3% for coal. Firewood is generally used in the same boilers and furnaces as coal, together with coal[12] and, in the current demanding situation related to the availability of coal, is often the only option. The situation is so problematic that eastern Poland is experiencing depopulation, an aging society, and an asymmetric demographic structure: a predominance of females who are post-working age. Thus, multifaceted support is needed in order to implement the necessary transformations to care for the natural resources, while also considering the needs of local communities. Poland has been extraordinarily lucky to have environments that are unique, in both Europe and the rest of the world. Such environments can be found in Warmia and Masuria, Polesie, Roztocze and the Białowieża Forest.

They require proper management and protection. Much of these valuable environmental resources are located on agricultural land. Hence, Polish farmers have a paved way to a new function. In addition to food producers, they can (and have every reason to) become providers of environmental public goods, for example, by enhancing and building the green buffer zones that are essential to creating an ecologically sustainable world. Such measures are supported by the European Union (EU). However, applying for EU funding requires the mobilization of capital (human, social, financial), which clearly prioritizes the owners of large agricultural enterprises who possess the right knowledge, skills, and financial wherewithal to take advantage of the wide range of EU subsidies dedicated to "greening" agricul-

ture. Given that the political importance of the role of farmers in adapting to the effects of climate change is growing,[13] there is an apparent need to revise the procedures for providing public support so that this funding can benefit all farmers, including small farm users who are mainly located in eastern and southern Poland – regions which are renowned for their valuable natural environmental resources, both animate and inanimate.

In addition to the post-socialist transformation, the turn of the century also brought Poland further challenges related to the processes of globalization, liberalization, and deregulation, which, in the Polish context, took on an unexpectedly dynamic form. These processes overlapped with the systemic, political, economic, and social changes already underway, as well as the integration changes associated with Poland's accession to EU structures. This hybridization of development, manifested in the layering of interacting processes, resulted in unprecedented (and unexpected) normative, social and, of course, environmental consequences.[14] In the course of this transformation period of "catching up with the West", as well as development guided by neoliberal models, a rather dangerous trend emerged and took root – denying the validity of national (and regional and local) experiences, which supposedly stemmed from the learned helplessness of Polish society as a legacy of the era of partition and real socialism.[15] Adopting such a perspective allowed the unreflective pursuit of short-term goals primarily aimed at maximizing profits and strengthening business dependencies. An extreme example is the privatization of state agricultural farms, which concentrated a significant part of the country's agricultural land resources. The first phase of this process consisted of "freeing up land" by removing restrictions on the acquisition of agricultural land, including areas of natural value. This led to a growing interest in the agricultural land market from non-agricultural entrepreneurs, for whom farmland was a capital investment and/or a means to engage in business activities, which also led to land speculation. The cascading consequences of these measures are still being felt today in the form of a range of socio-economic issues faced by post-SAF areas and their inhabitants.[16]

At the same time, Poland, like other Central European countries, became an interesting destination for the transfer of environmental hazards from Western Europe in a process called *Western eco-colonialism*[17] or *ecological imperialism*.[18] One example is the dynamic industrialization of agricultural production. Instead of measures aimed at incorporating Polish agricultural regions and small farms into the global food and agriculture market, there was an expansion of multinational corporations, especially into the areas occupied by former SAFs. These measures resulted in short-term financial gain but, in the long term, a drain on resources, decreasing the quality of life in the new EU Member States, mainly in rural areas linked to former state farms. Rural and peripheral regions were particularly affected as potential destinations for the imported environmental hazards, exacerbating spatial polarization.

International trade in waste—albeit lawful—may also be a threat to all EU Member States. Admittedly, individual criteria defined at national level regulate the functioning of the waste market, but as it is gaining pace and importance due to increasing waste production, it undoubtedly requires further supranational regulation; and such regulation is emerging. Indications of a change in the right direction are manifesting in the solutions being put in place at the EU level that require a sustainable waste management model, reuse in line with the principles of the circular economy, and a short production chain, meaning that the place of disposal should coincide with the place of generation.[19]

It is not only EU legislation that needs to be monitored, responded to, and continuously updated, but also the procedures related to the distribution of EU funds. A poorly functioning system allows undesirable and even harmful activities to take place and become entrenched in local communities. They could be called "internal neo-colonialism", characterized by the functioning of "fictional farmers", i.e., natural

> The situation is so problematic that eastern Poland is experiencing depopulation, an aging society, and an asymmetric demographic structure.

persons, or more often companies, unconnected to the place of farming, but leasing land with the sole aim of obtaining EU subsidies. It is common practice to acquire land located in legally protected areas, renowned for their high environmental quality, as this type of land guarantees the highest proportion of EU funding for sustainable agricultural development, its "greening", and the protection of natural resources located within the boundaries of agricultural land. This practice is most widespread in the regions of Poland that are famous for their presence of large-scale ex-farms as, by virtue of their considerable size, they guarantee a rapid and substantial financial income. The current model of EU direct payments, which is not sufficiently linked to the actual farming activity in a given area, should be abandoned, as it contributes to a drain on grant funds and local (natural) resources, and reinforces the exclusion of those rural communities that are actually linked to the economically drained rural areas, and the peripherality and pauperization of such areas. It also prevents any discussion regarding environmental justice for and the ecological integrity of rural areas by creating an option to isolate the valuable resource of agricultural land from its immediate surroundings, although it is actually an immobile local resource that should only be regarded as an integral part of the surrounding rural areas.

Crisis and What Next?

The transition has been ongoing in Poland since 1989 has been further disrupted by crises related to the COVID-19 pandemic and the military invasion of Ukraine, the repercussions of which are multilateral and global. This uncertain age of post-modernity brings many challenges, including those highlighted in the early 2020s – the energy crisis and the directly related economic crisis. Taking into account all the energy sources that are used in Poland, coal plays a dominant role. This has been the case in Poland for several decades. The legacy of the socialist era is also characterized by the centralization of energy systems and the gap between the places of energy production and consumption. Nevertheless, it should be noted that the role of coal is decreasing in favor of other energy sources. We are currently observing the diversification of energy sources and indications of the decentralization of energy production. While in 1985, coal accounted for over 97% of energy resources, in 2020, this had dropped to 70%. Other sources include gas, oil, and renewables. However, coal is still the backbone of the Polish energy sector; not only domestic coal, but also imported coal.[20]

> Taking into account all the energy sources that are used in Poland, coal plays a dominant role.

At present, we have noted changes in the global energy sector, including in Europe and Poland, which can be described as the energy transition. This process aims to increase access to energy services, bridging energy poverty or exclusion, as well as decarbonizing the economy and protecting the environment. The axis of this process is a shift from the dominance of fossil fuels toward renewable energy sources (RES) and, more broadly, low-carbon sources. As a post-socialist country with a post-industrial coal heritage and culture, Poland requires particular focus and an individual approach to issues related to transforming the energy sector in the spirit of a just transition. The main variables that determine the extent and pace of the energy transition are: the dominance of coal in the country's energy infrastructure and the import of fossil fuels expected to meet the growing energy needs generated by the country's socio-economic development. For example, between 2006 and 2017, final energy consumption in Poland increased by 15.5%, while in the EU as a whole it decreased by 6% over the same period.[21] The foundation of a just transition is not merely the simple swapping of one energy source with another, or the introduction of new energy technologies; above all, it is a process of social change. The road to the complete transformation of the energy sector and the acceptance of these changes – particularly if they directly affect the inhabitants of (post-)mining regions, anxious about their future, their jobs, and their families – is not linear but multifaceted, spatially, historically and socially dependent, and marked by a time vector.[22]

These variables of the Polish (and more broadly – European and global) energy transi-

Figure 1. **Change in installed capacity of RES projects in Poland during the 20st century**

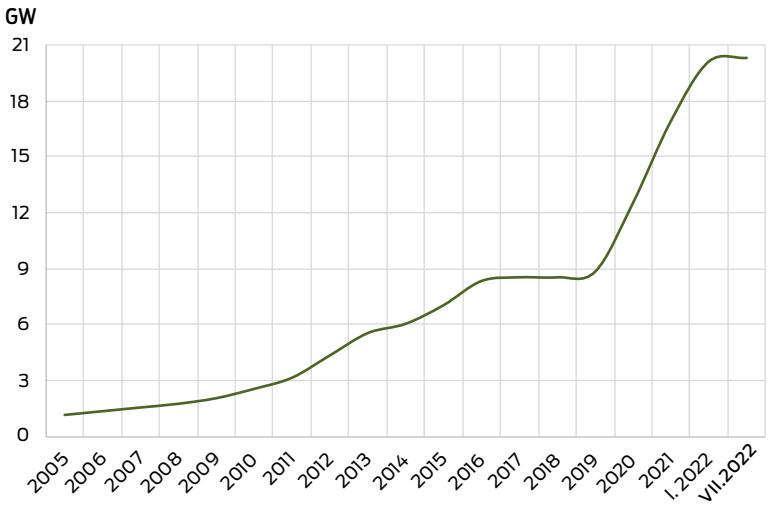
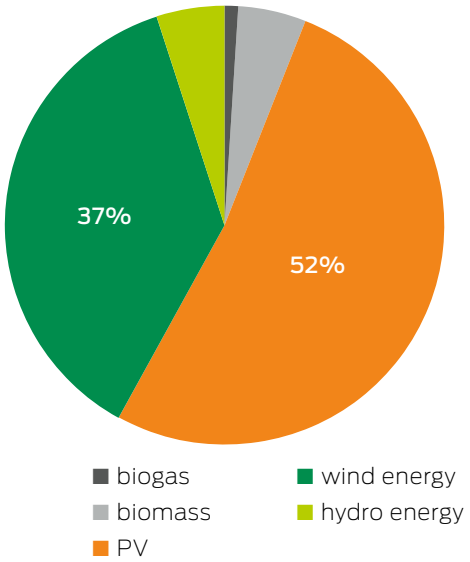


Figure 2. **Structure of RES capacity in Poland, July 2022**



Source: Own study based on data from the Energy Market Agency, https://www.are.waw.pl/.

tion are modified by the effects of the current geopolitical situation. The abandonment of Russian coal and gas (until recently, Russia was one of the crucial players in the European fossil fuel market) means that the energy mix has to be redefined in a reasonably short time frame. In the case of Poland, the events of 2022 brought enormous challenges related to the need to ensure the country's energy security, including diversification of the directions of energy sources, as well as the sources themselves.

Diversification of fossil fuel imports had already been prepared and implemented for a considerable period of time (construction of infrastructure facilities, search for co-operators). Nevertheless, the process has had to be significantly intensified. Regarding the diversification of Poland's energy mix, since the 2000s, we have seen an increase in the installed capacity of RES-based energy facilities, mainly wind, biomass and solar.

The latter source has become particularly important in recent years, speeding up the transformation of the energy sector, especially in its micro-scale, prosumer dimension. Currently, almost 35% of all installed capacity in the country is derived from renewable sources.[23]

When there is a crisis, i.e., a breakdown of the existing order and rules, it is impossible to return to equilibrium without recombining and adapting to the changes that have taken place. Fortunately, man is endowed with a natural inclination to start anew.[24] When considering the problems affecting us today in this context, it is worth noting the opportunities that are emerging from this state of affairs. Perhaps the critical situation associated with the currently shrinking fossil fuel market is creating the conditions for a change of tomorrow. Suppose it has been possible to boost the energy market in a relatively short period through the uptake of photovoltaics. In recent years, and especially in recent months, due to public support, the popularization of PV prosumer installations has intensified. In Poland, the first two months of 2022 alone saw an increase in PV capacity by over 1 GW, which guarantees a place on the European podium in terms of PV capacity. It is estimated that three-quarter of the installed capacities in Polish photovoltaics are prosumer installations.[25] What might happen if other RES were brought into play?

Undoubtedly, the RES market also needs to diversify, in terms of both source structure and facility size. The experience of the last two years, when small and micro photovoltaic projects began to reign supreme in the Polish

> The energy sector, as the lifeblood of the economy, absolutely depends on public support.

energy market, significantly relieving household budgets of the burden of electricity prices, is an incredible opportunity to disseminate prosumer energy in relation to other RES that also allow for the production of heat and hot water. This will then have both a local and a global effect. This is because, on the one hand, the development of small-scale RES offers a real opportunity for household budgets to save money (in terms of charges for generating electricity and heat) which, in this age of increasing prices and the cost of living, is an invaluable benefit to society. On the other hand, distributed energy generation strengthens a country's energy security and independence from external supplies, shortens the production chain (the place of consumption coincides with the place of energy production) and, most importantly, guarantees a "civilizational leap" for peripheral rural areas that struggle with the many problems that started during the partitions and which were consolidated during the socialist era. When turning to local energy resources, it is worth noting that biodegradable waste processed in biogas plants is also a valuable source of energy. The increasing production of waste and the range of issues associated with its management may also offer another energy opportunity, namely, the chance to increase the production of the biogas which is used to generate electricity and heat. The availability of waste is not limited spatially, as biogas production can use agricultural, municipal, and industrial waste alike; nor environmentally – after all, the supply of substrates depends on people.[26] Thus, regarding circular economy guidelines, waste is another valuable energy resource that is available locally.

Summary

The area of Poland constitutes more than 3% of the European continent and its population comprises more than 5% of all Europeans. As a country with such a large land mass and population potential, whose eastern border is also the eastern border of the European Union and NATO, it should build resilience so that it can respond to and cope with any shocks and external threats, including those that affect the energy sector. The increase in domestic energy production from RES and the diversification of energy sources strengthen national security and improve the competitiveness of the economy and the quality of life of the population. Further transformation of the energy development path is possible with systemic public support (e.g., using EU funds, strategic planning, legislative solutions), as well as individual undertakings, as local contexts and the consideration of local resources are key.

The energy sector, as the lifeblood of the economy, absolutely depends on public support. Nevertheless, an indispensable element of an effective energy transition is the democratization of energy decisions and the involvement of local communities that state their needs and expectations, including matters relating to fuel procurement and the future development of their immediate surroundings. In order to promote such proactive attitudes at local level, decision-makers should first contribute to their initiation and formation. Thus, a step toward a post-socialist sustainable space is education, especially in place-based education that fosters a bottom-up narrative, awareness, and proactive attitudes in residents, i.e., shaping and strengthening civil society and community engagement. It is extremely important to listen to the narratives that can be provided by initiators of change: institutional representatives, energy entrepreneurs, owners of small-scale RES projects, but also local leaders. Knowledge multipliers, which guarantee access to professional knowledge about the functioning of individual energy sources (including RES), energy efficiency, waste segregation and reuse, as well as other pro-environmental and pro-economy measures, are needed at every stage of school education, but also during the informal education of various social groups and categories. Naturally, such a process requires building networks of local people, engaging with the local fabric and embedding as much as possible in the local context. Moreover, the educational activities that are undertaken should promote the development of committed communities responsible for the sustainable transformation of their place of residence, their

neighborhood and highlight the role of civil society. They should foster a sense of agency, so necessary in today's fluctuating world. In addition, bottom-up activities initiated as a result of cross-sectoral cooperation have a greater chance of success if their planning and implementation take into account local needs and new opportunities that often cannot be spotted from the outside. ●

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Romania

Challenges Faced by Forest Governance and Management in Romania

Between Top-down Communist Hand-Me-Downs and Bottom-up Sustainability

by **Andra-Cosmina Albulescu**, **Michael Manton**, **Daniela Larion** and **Per Angelstam**

Since the early 1990s, at multiple levels of governance, sustainable forest management (SFM) policy has aimed to deliver multiple forest products, services and values that are socially just, ecologically sound, and economically viable (MCPFE, 1993).[1] This has changed policy agendas that focus on the sustained yield of timber production to also highlight the importance of sustaining multiple forest benefits, including safeguarding biodiversity and rural livelihoods. This has initiated heated debates about how forests should be managed.[2] The new EU Forest Strategy for 2030,[3] which includes the necessary measures to support climate adaptation and mitigation, and nature restoration, is one example. However, there are major differences in the social and ecological systems of Europe. This highlights the need to develop platforms for collaborative learning by evaluating policy instruments and their effects on forest management outcomes on the ground.

The European continent can be viewed as a laboratory for such learning. The legacies of the countries of Central and Eastern European of unstable legislative and institutional changes prior to, during and after the communist regime, combined with the unique remnants of high conservation value forests, represent a constant battlefield that illustrate the winding road of policy, political and governance transitions from top-down communist hand-me-downs toward the democracy of the West. Although it has been more than 30 years since the fall of the Iron Curtain in Eastern and Central Europe, the legacies of top-down hierarchical communist regimes can still be found. Forest management in Romania struggles with the challenges of communist hand-me-downs in policymaking, management practices and the

PHOTO: MATTHIAS SCHICKHOFER/EURONATUR

EuroNatur and AgentGreen are fighting for the preservation of Romania's paradise forests with actions such as this protest in the Făgăraş Mountains.

resulting mindset of its citizens. Against this background, the recent demands for the adaptation of forestry policies following the accession to the EU required great efforts and, in some cases, they were only implemented on paper.

In Romania, forests are considered to be one of the most precious and available natural capital assets; an appreciation which is also shown by popular expressions such as "The forest is the brother of the Romanian". The country benefits from diversified climatic conditions and landforms, which favored the transformation of the once dominating potential natural forests[4] into farmland, meadows, pastures, and settlement sites (Figure 1). While spruce and mixed broadleaf forests maintained large land cover proportions, the forest steppes and wetland forests were the most affected types of vegetation (Figure 2).[5] Currently, forests cover around 27% of the country (6,4 million hectares).[6] Broad-leaved deciduous forests dominate over coniferous forests, with the Carpathian Arch and adjacent higher elevated regions containing the largest area of forests (Figure 1). Although Romania does not rank among the most densely forested countries in Central and Eastern Europe, it is well-known for its remnants of high conservation value forests (including the largest area of primary and old-growth forests in this region.)[7]

This chapter is based on our review paper by Albulescu et al. (2022).[8] Here we summarize 1) the complex development of forest ownership and management in Romania, following WWI and WWII, then through the early days of the democratic transition, until the present time (2022), 2) the hand-me-downs from the communist era and the ways in which forest governance and management have tackled the challenges associated with the communist legacy. The overall aim of this chapter is to learn from lessons from the past, and to sketch a realistic outlook of the future measures that will be necessary to support sustainable forest management.

> The legacies of top-down hierarchical communist regimes can still be found.

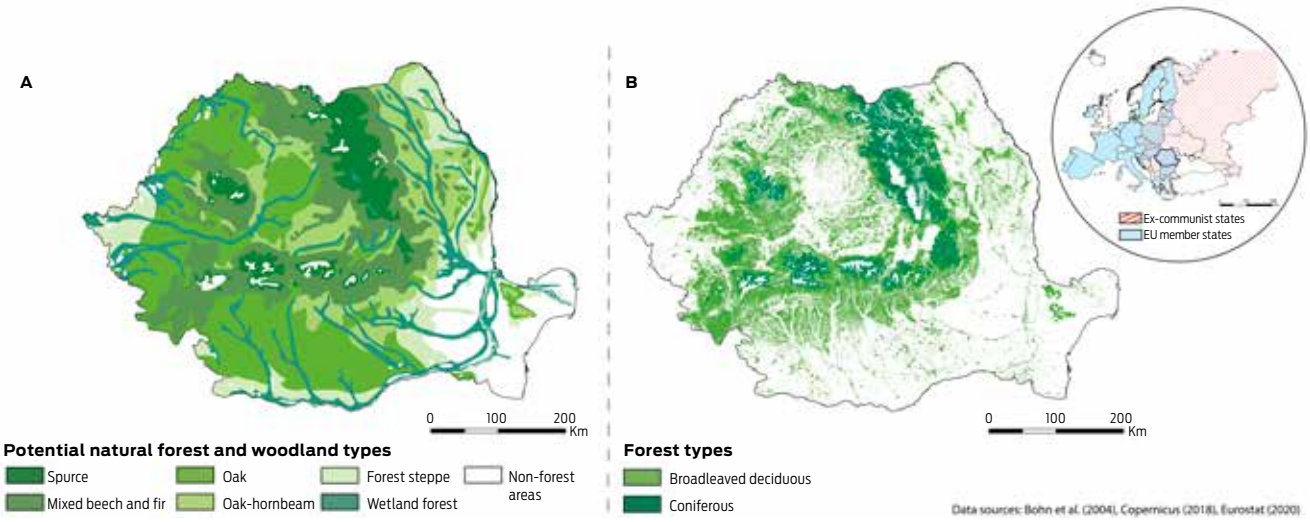

Figure 1. Potential natural forest and woodland types (A), current distribution of the two main forest types (B) in Romania, and a European context map

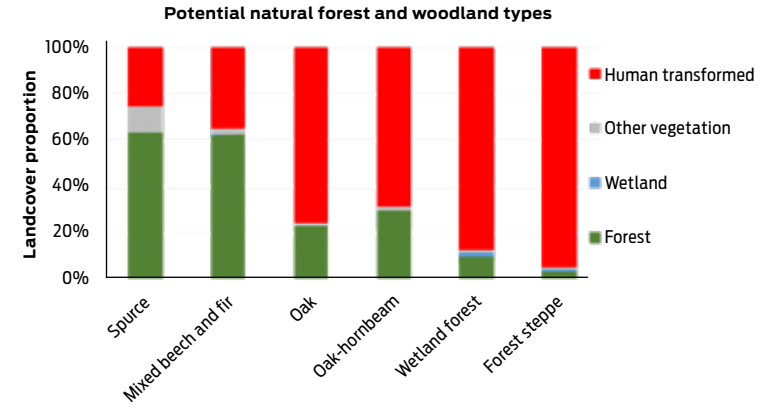

Figure 2. Illustration showing the disproportionate anthropogenic transformations that led to the loss of different potential natural forest and woodland types in Romania (Data sources: Bohn et al., 2004 and Copernicus, 2018)

Post-communist Transformations

The case study of Romanian forest governance and management systems in transition shows that post-communist forest ownership diversification from all forests being state owned to also including private ownership, and changes in the legal framework, are interwoven. Forest policies must be amended in order to incorporate prescriptions for new patterns and types of forest ownership as soon as they emerge. However, in the case of the post-communist transition in Romania, the first forest code[9] issued under the democratic regime took five years to be formulated, and the new regulations for private forest owners needed eight years.[10] This demonstrates the lengthy delays in adapting to changes in forest governance. This misfit in timing is the main source of the multiple challenges faced by forest governance and management in terms of changing from a centrally planned economy to a market economy.

Forest Ownership

In 1948, shortly after the communist regime came to power in Romania, the socialist authorities mandated the nationalization of forestland. All forestlands became the responsibility of the Romanian Socialist State and were managed by forest districts with regional units.[11] This reform significantly impacted rural communities from both an economic and psychological perspective. Key issues were uncertainty, insecurity, and lack of trust, which would evolve into ripped "grapes of wrath" several decades later. In 1989, the Romanian Revolution set the scene for a process of democratization as communist leader Nicolae Ceaușescu was violently removed from office.

Subsequently, the restitution of forestland emerged as a way of paying citizens for the moral debt inflicted by the communist regime. Romania is the only ex-communist state in which an area limit for restitution was introduced (Law no. 18/1991, Law no. 1/2000),[12] and in which the process unfolded in three phases (Figure 3)[13]. The first phase began in 1991 and

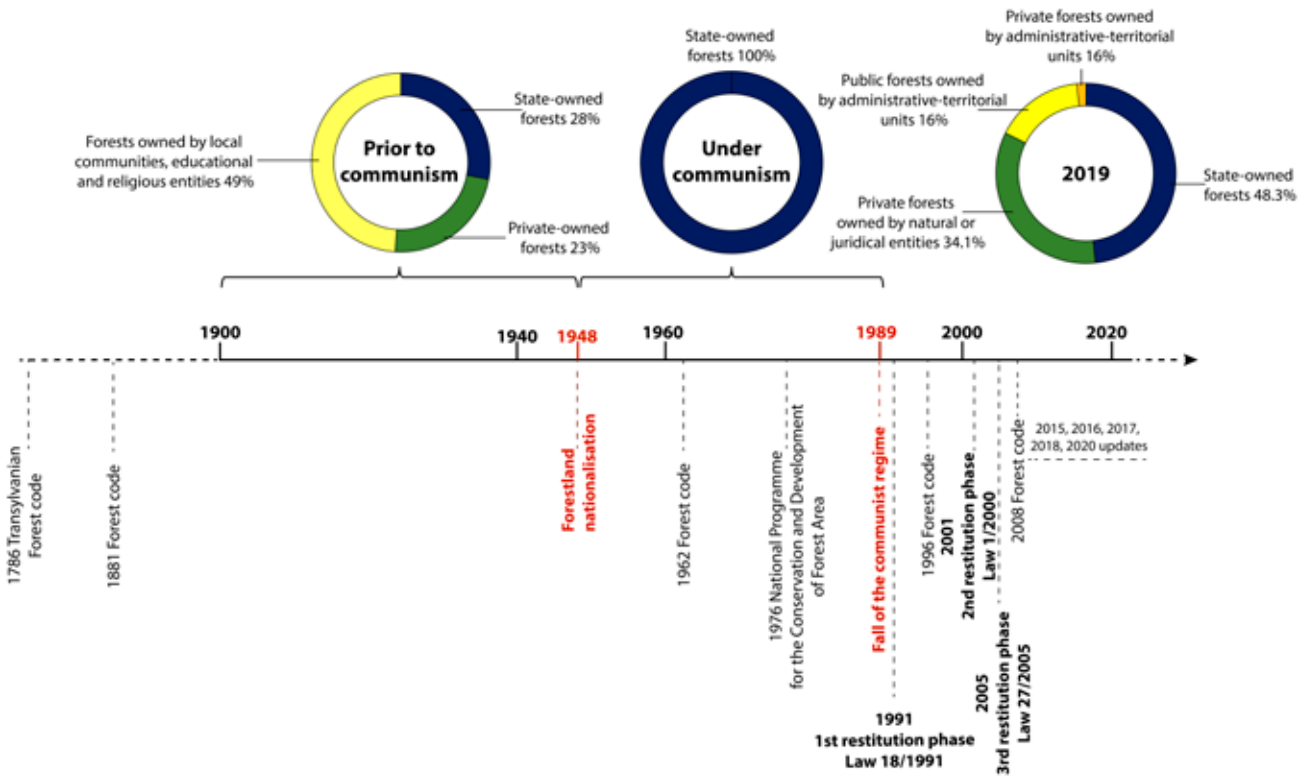

Figure 3. Forest ownership evolution, political milestones and the development of forestry-related legal frameworks in Romania (Albulescu et al., 2022)

was defined by a restitution limit of one hectare of forestland, regardless of the total area of previously owned forest property. The second restitution law increased the limit to 10 hectares for individuals and 30 hectares for church and educational institutions. The final restitution phase began in 2005, when Law no. 27/2005 lifted the area restitution limit. The literature documents many cases of unlawful restitution of forestland.[14] In 2020, private forests accounted for approximately 36% of the total forest fund, state forests represented around 48% and public forests owned by administrative territorial units made up 16%.[15]

Forestry-related Legal Framework

Romanian forests were depleted after the intensive harvesting following the high demand for timber products during World War I and II. This shaped the forest management of the early communist era toward the goal of increasing forest cover through active reforestation.[16] Under the communist regime, forest management was regulated by the 1962 Forest Code for many years. However, approximately a decade later, the war reparations to the Soviet Union[17] and the loans from the International Monetary Fund[18] placed a heavy burden on the Romanian economy. This resulted in large scale forest felling after 1975 to pay off these debts.

The first forest code under the democratic regime was issued in 1996, although it did not regulate forest harvesting in the emerging private forests. The paradigm remained unchanged, meaning that forests were managed according to the forest regime set by state forest districts regardless of who owned them.[19] The first forestry regulations to make a distinction between the various types of forestland ownership appeared in 1999. Democratic values and a market economy continued to be incorporated in 2002, with the creation of private forest districts, which were an option for private forest owners. There was also an 11-year gap between the emergence of privately-owned forests and the creation of monitoring and law enforcement agencies (i.e., forest inspectorates and environmental guards).

Currently, forest management plans extend for 10 years and stipulate the permitted

> Higher harvesting rates were reported for private forests compared to state-owned forests.

harvested volume for each year, the extent, distribution, and types of felling, as well as an outline of the potential investments in forest infrastructure for each forest unit, regardless of ownership. State-owned forests are managed by Romsilva National Forest Administration and several other smaller institutions, through forest districts.[20] Private forest owners can choose either private entities or a state forest district to develop their forest management plan under contract, which is mandatory in order to carry out forest harvesting. The management plans are regulated by the 2008 Forest Code and its subsequent amendments, but this legislative document has been repeatedly criticized for being overly prescriptive.[21] Compliance with the Forest Code and the forest regime is verified by forest guards, who are responsible for monitoring and control.

Forest Management

To summarize, forest management in Romania has evolved under the various forest codes, forestry regimes and forest management plans, from those that focused on forest regeneration prior to the communist regime to others that were organized under the auspices of the sustainable yield of timber during the communist era. Romania is also currently seeking to strike a balance between timber harvesting, rural development, and forest conservation.[22]

According to Mason et al.,[23] continuous cover forestry is the main silvicultural system (53%) in Romania. Clear felling is formally limited to 3–5 hectares although in remote mountainous regions there has been a clear expansion of clear-felling practices over extensive areas.[24] An illegal forestry practice is the harvesting of high-value healthy trees, which are registered as sanitation felling in order to bypass the restrictions related to harvesting age and diameter as mandated by forest management plans.[25] Additionally, the "cut the best and leave the rest" high-grading forest harvesting approach is applied.[26]

Biodiversity Conservation

Regarding biodiversity conservation, the post-communist construction of the protected area network in Romania stands out as another legacy of the communist regime. In 1970, there were 300 nature reserves in Romania covering around 100,000 hectares,[27] but their efficiency in promoting nature conservation and restoration was significantly diluted by forest harvesting, poaching, mining and agriculture.[28] After the fall of the communist regime, the protected areas increased from 4% of the national territory in the early 1990s to 7% in 2005,[29] 19% in 2010[30] and 23% in 2022.[31] An important step toward alignment with global environmental governance was the designation of Natura 2000 (N2k) sites, but its implementation was carried out more on paper than in the actual field.

In the first two designation rounds, the overlap rate between the new N2k sites and the already existing protected areas was estimated to be 96,2%,[32] which has since decreased to 20,23%[33] with the designation of more N2k sites in recent years. Moreover, the compensations provided by the EU for forest ownership within N2k sites supporting biodiversity conservation are difficult to access due to the top-down command-and-control legislative instruments.[34] Other arguments that support the "on paper" designation of such protected sites concern both their management (i.e., delays in implementing conservation programs, underfunding, weak law enforcement, poor consultation with stakeholders)[35] and their efficiency to form functional habitat networks.[36]

Communist Top-down Hand-Me-Downs

A delay between the restitution of forestland and the elaboration and enforcement of legal prescriptions that address forest harvesting in the new private forests enabled the intensive harvesting of timber, which occurred both under and outside the contemporary legal frameworks.[37] This includes unauthorized logging, timber theft, illicit trade in timber and timber products, and illegal timber processing.[38] Higher harvesting rates were reported for private forests compared to state-owned forests,[39] as well as higher rates of timber theft.[40] Also, the restitution of forestland within the protected areas of the Northeast Romanian Carpathian

Mountains may result in increased anthropogenic forest disturbance,[41] but this correlation was not definitively proven.

Illegal cutting figures reached as high as one million m^3 of wood for each year from 1992–2002.[42] Multiple factors may have contributed to this increase in illegal forest harvesting: the desire to make an immediate profit, the fear-driven mentality of unsecure ownership, the economic instability and market pressures of the early-political transition, corruption, and a lack of environmental awareness.[43] It was later estimated that approximately 8.8 million m^3 of wood had been illegally harvested from 2008–2012 and that the figure for the period from 2013–2018 increased to 20 million m^3.[44] These figures only account for the identified cases of illegal forest harvesting, although the true figures remain unknown.[45]

An interesting distinction may be made about the two phases of large-scale illegal forest felling in Romania (i.e., the early and the late democratic transition phases). While the increased forest harvesting of 1991–2008 was mainly driven by factors such as fear, economic insecurity, societal uncertainty, the subsequent illegal felling may be associated with the restrictive Romanian legal framework which paradoxically encouraged the development of ways to bypass it.[46]

The communist era fostered an individualist "everyone for himself" mentality. It could be said that during the early post-communist years, the main priority of people in Romania was to sustain and improve their livelihoods, regardless of the costs supported by third parties (e.g., local rural communities or the environment). Thus, the restitution of forestland and the exploitation of timber presented themselves as opportunities to ensure financial stability. Subsequently, the individualist spirit fueled the emergence of various unlawful harvesting practices, which translated into high forest felling rates for short-term profit. Moreover, the communism-inherited mindset re-surfaced during the COVID-19 pandemic, a time when the narrative of illegal logging escalated.[47] Physical attacks on foresters continued during the pandemic, which triggered the "militarization of forestry" by providing foresters with firearms. In order to counteract the illegal forest harvesting that was facilitated by the combination of forest remoteness and COVID-19 movement restrictions, forests were guarded by both the army and the police.[48]

A contributory factor that favored illegal harvesting was the fact that the national authorities failed to implement systems and programs that should have halted this issue at an earlier stage (e.g., the European Union Timber Regulation (EUTR); the Integrated System for Timber Monitoring (SUMAL)). The six-year delay between the implementation of SUMAL and the enforcement of EUTR,[49] as well as the lack of funding to update SUMAL,[50] together with multiple breaches of environmental directives (i.e., Habitats Directive 92/43/CEE, Directive 2003/4/CE, Directive 2001/42/EC) resulted in the European Commission filing a lawsuit against the Romanian government in 2020.[51] Consequently, timber tracking technologies were sufficiently funded, the capacity of forestry law enforcement agencies was enhanced[52] and the 2008 Forest Code was amended to cover additional breaches of the law and include harsher penalties.[53] Thus, a vicious circle has developed, starting with 1) the elaboration of restrictive forestry regulations which were neither respected nor enforced, 2) the spawning of ways to bypass the regulations, and 3) the tightening of restrictions.[54] The victims here are the local rural communities that depend on the multiple use of forests, and the winners seem to be the politicians who used the illicit felling battle as part of their political agenda.[55]

The individualist mentality was also based on the inherited lack of trust in the authorities, coupled with the stigma experienced by private forest owners in the aftermath of early-transition extensive forest exploitation.[56] Such attitudes were consolidated by the fact that forest management plans rarely integrate the interest of private owners[57] and by failures of certain law enforcement. For instance, the 2015 amendment of the Forest Code regulates the compensation provided to private owners

> Steps toward developing sustainable forest management have indeed commenced.

who were assigned protected forests during the forest restitution program in which harvesting is prohibited. However, this compensation has never been paid.[58]

Future Key Topics

We see three key topics unfolding in Romania: (1) transitioning from cropping systems to multifunctional landscapes, and the need for a diversity of forest management systems, (2) learning through evaluation based on comparisons of countries with different transitions in forest governance and management, and (3) the increased use of forest certification.

The conventional approach to forestry is to view forests as cropping systems, the purpose of which is to maximize the production of raw material for industrial value chains and to provide traditional forestry jobs. The alternative view is that forests are complex ecosystems that should be used so that all products, services and values are maintained and sustained, and which can withstand various kinds of disturbances by being socio-ecologically resilient.[59] Forest cropping systems aim to reduce variation in terms of the number and type of tree species, and the structure of forest stands, and do not allow for natural disturbances.[60] The adaptation to and the mitigation of climate change, as well as biodiversity conservation, aim to develop forests in exactly the opposite direction.[61] The New EU Forest Strategy for 2030[62] and the proposed Nature Restoration Law[63] now set the tone for a way toward supporting sustainable forest management. However, the European continent contains a wide variety of social, ecological, and historical contexts which need to be reviewed and considered in order to develop forest management systems that support sustainable forest management measures on the ground. Two critically important themes that have emerged are the increased diversity of forest management systems and spatial zoning to promote the effective delivery of competing ecosystem services.[64] The accommodation of multiple goods, services and values linked to different land covers in forest landscapes requires multiple management methods,[65] integrated spatial planning of large areas,[66] and therefore place-based collaboration at multiple levels of governance.[67] This calls for spatially explicit mapping of the multiple values of nature, i.e., ecosystem and landscape services,[68] and an understanding of the different kinds of policy instruments, as well as the planning and management systems, which are necessary to maintain these values over time for different forest and ownership categories and ecosystem services.

Two key topics are (1) what the visions for forest management in terms of desired portfolios of benefits are, and (2) the development of evidence-based targets on how to sustain different goods, services and values. In response to the different dimensions of biodiversity loss, a wide range of concepts aimed at addressing this issue have appeared in research and policy. Regarding forests and woodlands, the emulation of natural disturbance regimes[69] and the maintenance of traditional land-use practices, such as the multiple use of wooded grasslands[70] are examples of what is implied by the EC's New Forest Strategy and its call for closer-to-nature forestry.[71] The other topic is performance targets for indicators of biodiversity conservation.[72] The EU's biodiversity and forest strategies are based on the existence of evidence-based thresholds and tipping points for the effects of forestry intensification on the different components of biodiversity (such as composition, structure and function, i.e., species, habitats and processes). Targets such as the 10% for strict protection and an additional 20% for the restoration and management presented by CBD and EU illustrate what is necessary to achieve successful biodiversity conservation.

Despite all the challenges of adapting forest management in Romania to the requirements of sustainable forest management,[73] in conjunction with a democratic society and the global environmental agenda, including both climate adaptation and mitigation, as well as nature restoration that supports biodiversity conservation,[74] steps toward developing sustainable forest management have indeed commenced. A third topic for future development in Romania is forest certification, which began in 2001 and

encompasses 43.9% of Romanian forests.[75] This percentage was primarily achieved through the certification of state-owned forestland under Romsilva National Forest Administration.[76] Forest certification has helped meet the requirements of the EU Timber Regulation.[77] Forest certification has also been beneficial to private owners by exempting them from paying property tax, offering them economic incentives, competitive advantages, etc.[78] Thus, forest certification can be viewed more like a "voluntary regulation".[79] However, it is hard to determine whether there is a definite link between forest certification and more sustainable forest management on the ground in Romania. This involves three main components of certification (i.e., harvest parameter methods, biodiversity maintenance and chain of custody). Indeed, research shows that forest certification has only had a limited effect on forest conservation[80] and forest management plans have not been modified because of forest certification.[81] Regarding biodiversity conservation, certification standards are the result of negotiations, not evidence-based performance targets.[82]

Both the communist and post-communist policies related to forests have shaped the evolution of forest landscape management in Romania. This stresses the need to learn from the past towards securing sustainable forest management into the future. These lessons provide insights on both positive and negative drivers of forest management, which can contribute to smooth future transition towards more sustainable forest management practices in Romania as well as other ex-communist countries. ●

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Russia

The State of Environmental Concerns in the Russian Arctic

by **Tatiana Kasperski** and **Paul Josephson**

Since the turn of the 21st century, the Russian government, industry, and military have redoubled efforts to claim Arctic regions as Russian territory, push the development of oil and gas, as well as platinum, nickel, copper and other important mineral ores, and increase the nation's military, including nuclear, presence. If the collapse of the USSR and of the Soviet model of economic development offered some hope for more measured assimilation of Arctic spaces and resources, the consolidation of oligarchic power under the presidency of Vladimir Putin has placed new environmental pressures on the region. Russia is now fully a resource state, committed to enhancing state power on the foundation of exploitation, processing, consumption and sale of very rich strategic minerals and fossil fuels.

In this article we aim to analyze the state of environmental concerns in the Russian Arctic in the 2020s. We focus on major sectors of the economy and areas of development (the oil and gas industry; transport infrastructure; peaceful and military nuclear technologies; and others). We also consider the extent of and limits to public opposition to the state's Arctic development strategy of placing emphasis on rapid, large-scale exploitation of resources, and the environmental challenges that have resulted. Of course, many of the challenges to sustainable development pre-date the current government. These challenges include reliance on Soviet infrastructures and practices; persistent, unremediated waste problems, especially for nuclear technologies, that date back to the Cold War; the introduction of new infrastructure into the region (pipelines, roads, railroads, and nuclear objects) that carry significant insult to ecosystems; and insufficiently rich research to provide a foundation to pursue more sustainable development. Global warming has also had a significant impact on Arctic flora, fauna and climate which exacerbates all these problems. While we aim to avoid a declensionist narrative in our analysis, there is much to worry about concerning the environmental stability of the Russian Arctic.

In order to frame the discussion it is helpful to recall that the US, Canada, Denmark, Finland, Iceland, Norway, Sweden and Russia possess Arctic territory, but that Russia stretches over half the Arctic Ocean coastline, and that approximately 2.5 million (1.7%) of Russia's inhabitants live in Arctic territory, or nearly half of the population living in the Arctic worldwide.[1] Russia's determination to turn this formerly Soviet space into Russian industrial and strategic territories will therefore have a disproportionate impact. As in Soviet times, the effort is justified by the perceived military, strategic and economic value of the region to the state. Arctic resources create one-tenth of national income and one-fifth of Russian exports. 80% of Russian gas, 90%of nickel and cobalt, 60% of copper and so on come from the Arctic.[2]

Is the Russian government prepared to deal with the environmental challenges of the next decades? On paper, the government recognizes the importance of proper environmental controls. A series of proclamations have called for the establishment of special regimes of natural resource use and environmental protection; reclamation; remediation and proper disposal of toxic waste. In April 2010, perhaps in preparation for designating 2017 the Year of Ecology, Putin visited Alexandra Land Island of the Franz Josef archipelago to order the global cleanup of the Russian North. An April 25, 2011, decree approving a comprehensive plan for implementation of the Climate Doctrine of the Russian Federation by 2020 followed. In 2013, another "Strategy for the Development of the Arctic Zone of the Russian Federation and National Security for the period up to 2020" appeared. From 2012 to 2015, a "general" cleanup was carried out on Novaia Zemlia and Franz Josef Land; ultimately 349 hectares of land was reclaimed. In the Year of Ecology (2017), the government designated seven national parks, two nature preserves and two wildlife preserves, a total of six of which were in Arctic or sub-Arctic zones. Finally, in 2017–2019, the Ministry of Natural Resources and Environment set forth a special roadmap for Arctic cleanup, and 9 billion rubles (under $150 million) were spent on various projects.[3] But considering that the Russian Arctic basin is some 16.5 million km^2, and that the annual revenue of Gazprom alone has reached nearly $90 billion, the environmental efforts likely will not meet the needs of fragile ecosystems and local people, on top of which many government officials see global warming not as a danger, but an opportunity for Arctic development as is seen in the following brief discussions of the state of oil and gas industry, transportation infrastructure including nuclear power, and hydroelectricity. While most of this discussion considers the Arctic in the 2020s, in places we refer to earlier periods and approaches to highlight continuities and changes within the recent Russian and Soviet past.

A map showing Russian claims in the Arctic Ocean.
PHOTO: WIKIMEDIA COMMONS

Oil and Gas

Since oil and gas are so important to the Russian state, it is no surprise that the government and such state corporations as Gazprom will continue to develop fields. The industry has promised to comply with existing laws to ensure safe op-

Gazprom has laid almost 600 km of railway from Obskaya and Salekhard.

eration of facilities and environmentally sound construction of infrastructure. Officials claim they can drill safely by bringing wellheads closer together to minimize the area of diversion, while ensuring the necessary level of industrial safety through fully automated and redundant safety systems. In spite of these efforts, the Arctic environment is in a crisis state. For example, gas flaring of ongoing oil and gas extraction on the Arctic continental shelf "has already had a devastating impact on the composition of the Arctic atmosphere."[4] Environmental hotspots of mining (gold, platinum), electrical energy, and coal, oil and gas stretch across the region.[5]

Discussion of one case, Yamal Peninsula gas and oil operations, reveals the scope of the problem in 2022. At twelve major deposits in Yamal Peninsula fields, specialists have identified 26.5 trillion m^3 of gas, 1.6 billion tons of gas condensate, and 300 million tons of oil reserves. Especially since the late 2010s, Rosneft, Gazprom, and Novatek have rapidly developed pipeline, port, pumping, road, and railroad infrastructure to extract it. In the process, they pushed aside the indigenous population who paid with lost cultural heritage and a polluted environment.[6] Two massive pipelines that entered into operation in the last decade, Bovanenkovo-Ukhta 1 and 2, have interrupted traditional Nenets reindeer herding. In addition, Gazprom has laid almost 600 km of railway from Obskaya and Salekhard to its various LNG and other facilities on the peninsula.[7]

Industry engineers claimed that a variety of construction techniques have protected permafrost, swamps, and other ecosystems, and that the company reduced accident risk by one-quarter from 2010 to 2016.[8] In fact, Gazprom's environmental record across the region is poor. A variety of technogenic phenomena have a particularly poignant negative impact on the health of indigenous ethnic groups, especially heavy metal contamination (cadmium, lead, nickel, and chromium). Oil sheens on land and lakes indicate haphazard leaks and acidification. Bodies of water are in particularly poor condition, especially in the petroleum regions of the tundra, with high levels of pollution in

A train on the Obskaya–Bovanenkovo railway.
PHOTO: WIKIMEDIA COMMONS

the Nenets and Yamal-Nenets Autonomous, Murmansk and Arkhangelsk regions, where the levels of various toxic chemicals exceed norms by 2.5 to 5 times. In all, in the Nenets Autonomous region, nearly three-quarters of water samples do not meet national microbiological standards. Entire regions have excessive levels of sulphur dioxide, and heightened risk of cancer from exposure to benzopyrene.[9] Raising questions about any real commitment to environmental concerns, Gazprom officials have obfuscated requests by the prosecutor's office, county departments, and the national environmental inspectorate, Rosprirodnadzor, to investigate the situation. The result is that, in 2022, Gazprom controls the disposition of and access to vast land holdings in fragile environments, but has ignored legal, public and other pressures to demonstrate that its operations are fully in tune with laws and regulations.[10] Another area of concern over fragile environments is in the nuclear sphere where the Soviet legacy continues to have an impact.

Nuclearization of the Arctic

Russia is at once ignoring responsibility for cleanup of the nuclear legacy of the Soviet navy and nuclear bomb testing in Arctic regions, and accelerating nuclearization of the Arctic in military, transport and other ways. Low-, intermediate- and high-level waste, both solid and liquid, and entire reactor vessels, spent fuel,

and so on that originates largely in the Soviet period continue to threaten Arctic territory and waterways, while costly cleanup lags.[11] The waste extends from several harbors and inlets on the Kola Peninsula that were dedicated to the Soviet northern fleet, to dumping areas in the Kara Sea to the east and north, and to dumping areas in the shallow fjords of Novaia Zemlia. The waste consists of thousands of containers, nineteen ships containing radioactive waste, fourteen nuclear reactors, including five that still contain spent nuclear fuel, 735 other pieces of radioactively contaminated heavy machinery, and several nuclear submarines. There is also waste associated with nuclear ice breakers and support vessels, the Kola nuclear power station, and typical ancillary waste from hospitals, industry, and research centers that continues to accumulate. Even after a report that disclosed the extent of the waste and its location issued by a presidential commission under Boris Yeltsin in 1993, there has been concern about the incompleteness of data, which has been augmented from time to time, and about the current government's growing tendency to treat the situation as a state secret, or to be less than forthcoming about it.[12]

Disclosures of Soviet waste dumping practices in the Barents and Kara Seas in the early 1990s triggered extensive bi- and multi-lateral international activity across the Arctic and beyond to assess the risks of the waste and further steps to take. Such NGOs as Greenpeace and Bellona were important in revealing the extent of waste problems and forcing action. The Soviet-Russian practices led in 1993 to formal international action permanently to ban ocean radioactive waste disposal.[13] The process of inventorying accumulated military waste is still incomplete, remediation lags, and it will be far more costly than current budgets cover.[14]

In spite of this legacy Russia has redoubled efforts to modernize and introduce new nuclear objects into polar regions; we call this the nuclearization of the Arctic. The first of several planned floating nuclear power stations (NPPs) reactors, known by their Russian acronyms as PAES, the "Academic Lomonosov," operates at Pevek, on Chukotka's northern Arctic shore where it was moored in September 2019, significantly over cost and years late. It is intended to replace the Bilibino NPP that is being decommissioned.[15] The nuclearization of the Northern Sea Route (NSR) involves the identification of Rosatom, the state nuclear corporation, as a modernized version of Stalin's NSR administration called Glavsevmorput. With several PAES, five or six new nuclear icebreakers to be launched by 2030, and other nuclear devices, Rosatom promises to accelerate exploitation of oil, gas, and rare metals, and enable reliable shipping within Russia and to the growing economies of Asia including China. Rosatom's "Atomflot" division will ensure not only shipping but oil, gas, LNG, mining and other operations.[16]

Beginning in the 2010s, Russia has built up and reopened Arctic military bases with bombers, jets, new radar systems and housing to support armed forces. These technologies require extensive support including facilities with access to fuels, lubricants, and other hazardous materials – and weapons grade nuclear fuel. One new weapon in the Russian arsenal is the Poseidon nuclear-armed torpedo powered by a nuclear reactor (intended to cause radioactive waves to make a target coastline uninhabitable for decades). Nuclearization comes with great risks as was made clear from a deadly nuclear accident involving the Burevestnik cruise missile on August 8, 2019, at the State Central Navy Testing Range in Nenoksa on the White Sea when the "isotope power source" for a liquid-fueled rocket engine exploded. Reportedly, seven individuals died; hospital staff were unprepared to deal with the radiation risk and none wore radiation protective equipment. Some medical personnel and victims were flown to Moscow for radiation testing where medical staff were forced to sign non-disclosure agreements.[17]

Goodman and Kertysova concluded in 2020, "The Russian Arctic will constitute the most nuclearized waters on the planet by 2035."[18] This has already occurred. One of the reasons for the nuclearization is that "the regression of sea ice is perceived as a loss of security by

> The waste, that dates to the Soviet period, extends from several harbors and inlets on the Kola Peninsula.

> Nenets herders have organized against Yamal oil and gas operations.

the Kremlin, which reinforces its traditional siege mentality." Moscow will therefore pursue its "national security (including economic interests) by using a broad spectrum of military build-up and corresponding strategic initiatives, which include new nuclear weapons systems."[19] Interestingly, this view of ice melt as dangerous seems to conflict with those of economic ministries and corporations who see climate change as enabling the furtherance of resource development goals.

Public Resistance to Arctic Degradation

As noted earlier, Gazprom has limited access to its operations in part to prevent public scrutiny of environment degradation associated with extracting and pumping gas. In modern democratic societies, public input into technological decision-making – through courts, NGOs and protest – is an acceptable practice. In Russia, the absence of public scrutiny hampers efforts to pursue environmentally sound economic development. In fact, the Putin administration has increasingly limited spheres of activity where the public may engage in protest. Many NGOs have had to close – or have been shut down by the authorities.[20] In cases where public shareholders may participate in discussions (for example about nuclear waste), their participation has been limited or coopted.[21] Several recent controversies in Arctic and Sub-Arctic Russia indicate that public protest can proceed in limited circumstances.

Some ongoing protest centers on large scale hydroelectric projects in Arctic regions whose reservoirs will significantly alter river water regimes and inundate vast territories. The Soviet public was hardly silent about big water works projects. In the 1950s writers and scientists published open letters in *Literaturnaia Gazeta* over the despoliation of Lake Baikal, and in the mid-1980s *Novyi Mir* under editor Sergei Zalygin railed against – and derailed – the Siberian river diversion project. A 1988 environmental impact statement on one such Arctic dam concluded that it would have a negative impact on the region's inhabitants. Public scrutiny and opposition during perestroika led to the project being mothballed.[22] This protest tradition continues in the 2020s. Members of the group Angara-185 are battling against the construction of the Boguchanskaia GES (hydropower station), a state-sponsored dam to support the aluminum industry with negative environmental impacts in Irkutsk region, Krasnoyarsk, and Buriatia.[23] Another major protest in the 2020s involves the Evenk people, their NGO allies, and the Evenkiiskaia (formerly Turukhanskaia) hydroelectric power station (EvGES). When first proposed in the 1970s its supporters claimed the dam would have minimal impact on reindeer herding and fisheries in the Evenk region. In the 1990s and 2000s, as the economic situation of the Evenki worsened owing to inattention from Moscow, RusGidro claimed that the EvGES would benefit the Evenki, was important for economic, defense, and transport reasons, and would cut down on greenhouse gas pollution.[24] Yet the EvGES would flood more than 9,400 km^2; opponents understood it will destroy Evenk culture, and that electricity generated would go to the aluminum industry, not to ordinary folk. To silence two opponents, RusGidro asked the FSB to prosecute Alexander Kolotov and Aleksei Kolpakov for "extremism" and "inciting national hatred" for their anti-big dam website, www.plotina.net, and also asked they be charged with anti-government propaganda as foreign agents for WWF, Radio Freedom and Greenpeace. The crime of Plotina.Net! was to point out the environmental follies of the station. RusGidro tried to claim that Poltina.Net! was denying Evenkis' human right to hydroelectricity. Fortunately, the local district attorney rejected the charges of extremism.[25]

In another action, Nenets herders have organized against Yamal oil and gas operations. Nenets lands have long been under threat. In the 1950s the Soviets opened the Novaia Zemlia polygon to test 224 nuclear bombs, including the world's largest, after removing the Nenets from the archipelago. On the Yamal Peninsula, 5,000 Nenets herders with at least 280,000 reindeer are facing down pipelines and LNG facilities. Their resistance involves legal filings against expansion of oil and gas operations.

The government strives to silence the activists through administrative obstacles, accusing them of not having fulfilled the "correct paperwork" to organize in the first place. In 2012–2013 it forced the Russian Association of Indigenous Peoples of the North (RAIPON) to change its leadership. More recently, the Nenets leader of new initiatives, Eiko Serotetto, posted petitions on social media addressed to Putin to maintain reindeer numbers at the same levels and to assist the Nenets in maintaining reindeer migration routes that are being bisected by Gazprom operations.[26] Elsewhere, scores of Nenets, Nganasans, Dolgans, and other communities of Russia's far northern Taimyr Peninsula have protested against Nornickel pollution and the violation of their rights by officials and big business.[27]

One last case indicates the importance of public activism to ensure Arctic environmental security. It involves municipal garbage in the sub-Arctic Arkhangelsk regions. In 2019, thousands of local residents began protesting the construction of the Shies landfill destined to process solid waste from Moscow (over 1,000 km away). These protests have contributed to nationwide criticism of the Kremlin's plan to export its trash at the expense of poorer, sparsely populated regions. The garbage galvanized local opposition with residents risking cold and arrest to block construction of the landfill, filing suit in court, using digital tools to organize, and running for local office. In November 2021, public activists opened a "museum" about the protest in the community center of the village of Urdoma. The "garbage wars" have spread to other communities, too.[28] The Shies protests, like those against hydroelectricity and expansion of gas fields, indicate that the Russian citizen can engage in opposition to risky economic development programs, waste and pollution.

The Russian Arctic in a Time of Climate Change

The cold water on all of these challenges comes from the melting of the polar icecaps. Although some Russian officials, especially in Atomflot, are sanguine about the melt because it will enable rapid assimilation of the NSR, other recognize the significant and irreversible damage to the entire world ecosystem. The Arctic is warming at a faster rate than other regions in the world and summer sea ice could disappear entirely as early as 2035.[29] In the past the route opened for two months annually. Due to ice melt, it is gradually becoming available for six months. Trade – increased shipping between several European countries, China and Russia – will stimulate more pollutants, and damage flora and fauna alike, upsetting an already threatened ecosystem.

Russian Arctic National Park, Novaya Zemlya
PHOTO: WIKIMEDIA COMMONS

Understanding and preparing for these significant environmental changes will be quite challenging given that Russian researchers have been lax in the study of environmental problems in a variety of areas. For example, their work on the biomonitoring of persistent organic pollutants (POPs) and metals in biota and human tissues on the territory of the Russian Arctic has been relatively limited during the last forty years; for several Russian Arctic regions there are no data. The overwhelming majority of recent studies have been carried out within the framework of international projects that will likely end because of sanctions imposed on Russia due to Russia's war on Ukraine.[30] The list of problems goes on from heavy metals to plastics to disastrous accidents.[31]

Yet because Russia generally views Arctic regions as crucial to the nation's economic

and military interests, it is difficult to see the government opting for more measured development. Further, in the absence of public scrutiny, pollution accidents will occur out of sight. For example, Norilsk has long been called one of the most polluted places on earth because of being the world's biggest producer of palladium and high-grade nickel, and also a producer of platinum, cobalt and copper, and doing so with inadequate filters, scrubbers, or concern about workers or the surrounding environment. This is bad enough. But on May 29, 2020, a tank at the city's TETs-3 thermal power station failed, spilling 21,000 tons of diesel fuel into the tundra and the Piasina River from whence it flowed into the Arctic Ocean. Nornikel has insisted the cleanup is complete, but it is not, and the company paid a record fine for Russia of €1.6 billion, most of which went into central government coffers while only kopeks went to Norilsk itself. And in another return to the Soviet past, the response of the government to future accidents will be to exploit prisoners sentenced to forced labor in Arctic clean ups, not more aggressive efforts to prevent pollution in the first place.[32] Of course, Russian officials reject comparisons with Stalinist times of using forced labor to achieve state goals.

Thus, across taiga and tundra, Arctic ecosystems face significant technogenic pressures. Climate change will exacerbate the situation. Economic development will put further stress on them. And all of the world's Arctic military facilities, not only Russian, are poorly prepared for climate change, with soaring temperatures and melting permafrost already damaging such military infrastructure as runways, roads, building foundations, and waste dumps. As McCannon argues, non-natives have been "killing the Arctic" for centuries.[33] Unfortunately, Russians are now the first among all of them. ●

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Waste Management and Green Activism in Northwest Russia. The Anti-Shies Protests

by **Elena Gorbacheva**

Waste management has been problematic and inefficient in post-Soviet Russia for decades. More than 90% of municipal solid waste is being sent to landfills instead of recycling. Due to a lack of financial resources, infrastructure, and other conditions, the 2019 waste management reform failed. There were many waste-related conflicts before the reform, one of the most famous ones being the anti-Shies protests of 2018–2020, which resulted in victory for the activists and the cancellation of the gigantic landfill project for Moscow waste in Arkhangelsk Oblast'. In this report, I discuss waste management in Northwest Russia and anti-waste activism, its recent history, and the current situation.

The Post-Soviet Waste Management System in Russia

In modern Russia, recycling is almost non-existent: more than 90% of all municipal waste is stored at landfills. However, during Soviet times the situation was completely different. The level of consumption was in general lower, and plastic packaging was not in use. There was a strong tradition of recycling old clothes, paper, metal scrap, and glass. Additionally, biowaste was collected and redirected to agricultural enterprises for use as fodder.

After the collapse of the USSR, the established recycling system also ceased to exist. The increased consumption of new goods and the widespread usage of plastic led to a substantial increase in the generation of waste, particularly

> More than 90% of all municipal waste is stored at landfills.

Local residents organized the first protests against the project in August 2018.

in the capital area. Moscow and the Moscow Oblast' are responsible for producing one-fifth of all municipal waste in Russia.[1] The old landfills that were often constructed during the USSR quickly reached their maximum capacities and their owners not seldom violated sanitary norms, bribing their way out of fines and closing down. Incineration has been a major challenge in Russia's waste management system, prior to 2016 there were ten incinerators that were built under outdated and inefficient regulations. Furthermore, the lack of separate waste collection, which was not deemed economically viable due to a scarcity of recycling plants, made incineration a hazardous option. The waste business favored the storage of waste in landfills, where profits could be made.

The disposal of unsorted waste in landfills has resulted in the presence of hazardous substances and the production of landfill gas, which is a mixture of methane and carbon dioxide. These landfills not only produce unpleasant odors, but also generate leachate, which is a toxic liquid that can contaminate nearby water reservoirs.

The Russian authorities tried to solve the waste problem by introducing new regulations, eventually initiating the federal reform of waste management that started in 2019. According to this plan, the whole system of waste management is to be changed in such a way that each region will develop its own waste management scheme and appoint a private regional operator that would be responsible for its implementation. Based on these regional schemes, a federal scheme is developed, and a newly created Russian Ecological Operator is responsible for federal-level waste management, which includes building adequate infrastructure, ensuring sound regulation in the sphere, and achieving the target of recycling 36% of municipal solid waste by 2024, as opposed to 7% in 2018.[2]

Northwest Russia and Waste Management

The regions make their own individual decisions on waste management schemes, and geographical and socio-economic restrictions affect the decision greatly. Northwest Russian Federal Okrug comprises 11 regions which vary significantly. For instance, St. Petersburg is the second most populated city in Russia with almost 5 million inhabitants, while Nenets Autonomous Okrug has a population of just over 40,000. The climate of Northwest Russia varies from temperate to subarctic; the territory has many rivers, marshes, lakes, and forests. Some of the regions, like Arkhangelsk Oblast', are characterized by abundant river crossings, remote areas, and a shortage of roads, exacerbated by seasonal inaccessibility of roads during the autumn and spring months. Others, like St. Petersburg and Leningrad Oblast', have well-developed infrastructure, industries, tech enterprises, etc. All these and other conditions, like existing waste infrastructure and the volume of waste produced by the population and industry of a region, affect a region's territorial waste management scheme.

RANEPA and Kommersant-Regeneratsia published the waste tensions index[3] on August 10, 2021, with which they assess the likelihood of waste-related conflicts due to rising waste tariffs, proposals of new locally unwanted waste facilities, delays in closing down old overflooded landfills and the like. In the Northwestern Russia region, St. Petersburg and Vologda Oblast' are at the top of the waste tensions index,[4] while NAO is at the bottom, meaning that there is the lowest likelihood of waste-related protests. Yet, in 2018–2020, Arkhangelsk Oblast' and the neighboring Komi Republic were the epicenters of anti-waste protests during the Shies campaign.

Shies

In July 2018, residents of Urdoma in the southeast of Arkhangelsk Oblast' discovered that a new landfill was being built at the Shies railway station. Dubbed the "EcoTechnoPark," the landfill was intended for storing briquettes of shredded waste from Moscow, transported via the railway. Local residents organized the first protests against the project in August 2018, with around 2,000 individuals gathering in opposition. As the project progressed, activ-

ists established a camp near the construction site, consisting of several checkpoints that monitored the construction and attempted to prevent the delivery of fuel to the site.[5]

In October 2018, a group of activists in Arkhangelsk Oblast' with previous protest organization experience started a new protest movement called "Pomor'e is not a dump" [*Pomor'e ne pomoĭka*], which organized several all-Russia protest days, wrote petitions, attempted to hold a referendum on the prohibition of waste import from other regions, and provided information on the Shies construction and protests. Thousands of individuals and dozens of organizations joined the movement, not only in Northwest Russia, but in other regions too, with some protests events happening even abroad – in Oslo and Cologne.[6]

From April 2019, the activists initiated a series of termless protests, known as *besrochki*, which spread across numerous villages, towns, and cities in Russia. These protests involved daily gatherings in public squares and spreading information about the campaign and raising resources for it. A coalition of anti-waste activists known as "Stop Shies" was created in October 2019 by 30 environmental and civil rights groups in Arkhangelsk Oblast', Vologda Oblast', and Komi Republic.

Over the scope of two years, more than 700 rallies and pickets took place in Arkhangelsk Oblast' and Komi Republic alone, in addition to countless petitions, legal action, direct action, public addresses, and other forms of protest. As a result of the intense activism and opposition, construction works at Shies officially stopped in June 2019. An independent poll conducted in August[7] revealed that 95% of the population was against the project, and scientists including prominent members of the Russian Academy of Sciences criticized the landfill project and its lack of transparency.[8] In January 2020, a court declared the technical buildings built for the landfill to be illegal and ordered their demolition.[9] The governors of Arkhangelsk Oblast' and Komi Republic announced their resignation in April 2020,[10] and the new acting heads stated their opposition to the Shies landfill project.[11]

Environmentalists at the Shies camp.
PHOTO: VK.COM/PNPARH

Arkhangelsk Oblast' protests against a landfill at the Shies station.
PHOTO: VADIM KANTOR/BELLONA

At the camp, a banner reads "Hands off Shies!"
PHOTO: ALEXANDER RAIMONDI/BELLONA

> Shies is certainly a unique case of a seemingly NIMBY (Not In My Back Yard) type of protest.

The "Ecotechnopark Shiyes" was excluded from the list of priority investment projects in June 2020[12], and in October 2020, the constructor of the landfill officially announced that the project would not be pursued, while the damaged land at Shies was promised to be rehabilitated by 2031.[13] The Shies activists were ultimately victorious in their efforts.

Waste-related Activism in Northwest Russia

The Shies anti-waste activism campaign in Russia represents a unique case of a protest that started as a Not In My Back Yard (NIMBY) type, but transcended its local boundaries and garnered national attention, attracting a significant number of supporters from the Arkhangelsk Oblast', Komi Republic, and even beyond. What makes this campaign particularly noteworthy is the success of the activists in preventing the construction of a joint project between the government of Moscow and the Arkhangelsk regional authorities – powerful allies.

However, the Shies campaign is not the only instance of anti-waste activism in Northwest Russia. For example, since 2017, residents of Severodvinsk and nearby areas have been protesting against the proposed Rikasikha landfill, which was intended for inter-municipal waste for the residents of the north of Arkhangelsk Oblast'. The planned location of the landfill, less than 2 km away from the summerhouses of Severodvinsk residents, sparked opposition, and the first protest rally was organized in July 2018.[14] Later that very same organizer would become one of the founders of *Pomor'e ne pomoĭka*. After a series of protests, petitions, and public hearings, and with the momentum of the Shies campaign, the authorities decided to build the landfill elsewhere.[15] However, the Rikasikha campaign was primarily confined to the north of the region and was less widespread and active compared to the Shies campaign.

Protests against existing landfills are also not rare, but usually they appear when leachate and other poisonous substances emitting from the sites start bothering local

populations. The infamous Krasnyi bor landfill was one such landfill, for which residents of the Leningrad Oblast' and St. Petersburg have demanded rehabilitation for years.[16] The landfill has been declared a Hot Spot area by the Baltic Marine Environment Protection Commission (HELCOM).

Even though big protest campaigns against waste facilities certainly stand out, the green activism movement in Russia is diverse and encompasses a variety of forms. One such example is the Razdel'ny sbor movement, which has been promoting separate waste collection and environmental awareness since 2011.[17] Initially established in St. Petersburg, it has since spread to other regions in Russia. This movement organizes regular meetups where individuals can bring their separated waste, which is then collected and sold to recycling companies. This initiative plays a crucial role in increasing environmental awareness and promoting environmentally friendly practices in the absence of a developed state-level system of separate waste collection and recycling. While big cities like St. Petersburg offer easy access to private companies interested in purchasing recyclable materials, smaller localities may face challenges in finding such companies. Nevertheless, all settlements in Northwest Russia have a unique advantage, as their location offers opportunities for cross-border cooperation in the field of waste management and recycling.

Activism after 2020

The close proximity of Northwest Russia to Europe has facilitated extensive cooperation[18] between the region and European countries in the realm of environmental protection. Russian ENGOs received funding from abroad, participated in international activities, and received training for many years after the fall of the Iron Curtain. However, cooperation decreased after the "Foreign Agent" law was introduced in 2012, under which NGOs that receive funding from abroad and engage in political activity (a vaguely defined term) may be pronounced foreign agents and are required to follow restrictive procedures defined by the law, risking fines if they don't comply. Despite the fact that nature protection, volunteering, charity, science, and promotion of healthy lifestyle, among others, are excluded from the definition of "political activity", by November 2016, 20% of all the NGOs added to the Foreign Agents registry were environmental or had an environmental component.[19]

One such organization was Aetas, which was founded in 1999 in Arkhangelsk Oblast' and received funding from Norway's Natur og Ungdom organization. Aetas' main goal was to influence environmental decision-making in the region and educate society about environmental issues. However, their inclusion in the Foreign Agents registry forced them to close down. They reopened as "42" movement in early 2018 and became one of the active supporters of the Shies protests later in the same year. The "42" movement continued Aetas' work, though efforts were made to separate themselves from openly political actions. However, in December 2022, the "42" was once again designated as a foreign agent. In January 2023, the movement announced that they were compelled to shut down operations.[20]

Cooperation with neighboring European countries continued until, first, the coronavirus pandemic made it hard for activists to travel between states to exchange experiences, and then the full-scale Russian invasion of Ukraine on February 24, 2022 put an end to cooperation between the West and Russia. Coronavirus and the war also restrict the opportunities for activism in Russia itself. When the pandemic unraveled, many *bessrochki* ceased their activities or attempted to reduce social contacts and increase physical distancing measures among participants.

On March 31, 2020, the Russian State Duma passed a bill[21] on amendments to the Code of the Russian Federation on Administrative Offences. According to these amendments, anyone breaching the quarantine and other sanitary restrictions, or spreading fake information about the coronavirus, was to be fined. These restrictions of people's gatherings were still used in 2022 to control and prevent protest activities on the streets, including environmental ones.

This forced protesters to become even more active online. However, the Internet in Russia is not only affected by the social and digital divide, but freedom of the Internet was also significantly restricted in the country after the For Fair Election protests of 2011–2012.[22] Russia's war against Ukraine created a new wave of censorship in Russia, and now the opportunities for activism both online and offline are severely limited and risky. For instance, a lot of prominent activists who participated in the Shies campaign also publicly expressed their anti-war position on the streets and on social media. For that they were fined, searched, or forced to leave the country. By early October 2022, 19 out of 41[23] in Arkhangelsk Oblast' who received fines for the so-called "discreditation of actions of Russian armed forces" were also activists of Shies protests, according to *Pomor'e ne pomoĭka* Telegram channel.[24]

The invasion of Ukraine by Russia in February of 2022 had shocked the world, including the environmental activism community. As reported, protest activity appeared to halt for roughly 1.5 months after the start of the full-scale invasion.[25] Yet the ongoing waste reform in Russia continues to create tension, including plans for the construction of three waste sorting plants in the Arkhangelsk Oblast' in 2023. These plans are also facing opposition, although the activism efforts have shifted from street protests to a focus on public hearings[26] and signature collection, as highlighted by law-

> 20% of all the NGOs added to the Foreign Agents registry were environmental.

Three waste sorting plants are scheduled to be built in 2023 in the Arkhangelsk Oblast'.

yer Aleksandr Kozenkov in a post from May 27, 2022 on Vkontakte.[27] Additionally, lawyers keep on challenging the increased tariffs for waste collection and disposal, and not rarely they succeed. For instance, after a victory in court, the garbage collection fees in the Arkhangelsk Oblast' were reduced by nearly 30% in 2022.[28] Similar anti-waste activism can also be observed in other regions throughout Russia.

Conclusion

Northwest Russia is a complex territory comprising 11 regions that all differ from each other, but are united by their proximity to Europe and the population's love of nature. Green activism has been present in this region for decades, and even under Covid restrictions and the war that Russia wages against Ukraine, activism is still present, though severely limited. The economic hardships caused by factors such as emigration, international sanctions, and other conditions have diminished the public's willingness and ability to participate in environmental activism: when people don't have enough money to live on, care for the environment fades into the background. At the same time, many environmental activists are also expressing their anti-war stance, which forces them to leave the country to avoid imprisonment. This, of course, limits opportunities for activism on the ground.

Still, the environment will remain in Russia even when the regime fails. Waste reform is still ongoing, despite facing numerous difficulties, including a lack of funding, which is expected to worsen as the Russia's war against Ukraine continues. According to RBC,[29] the budget allocation for waste reform in 2023–2024 is projected to decrease by half. In addition, the authorities recently made a decision to prolong the use of landfills which were to be closed in 2023 by three additional years.[30] And one should not forget that an efficient waste management system with separate waste collection and recycling was already put under threat in 2019, when the State Duma passed a law according to which incineration counts as recycling if energy is produced.[31] Growing waste tariffs, poisonous substances from landfills that reached their capacities, incinerators – these factors will inevitably cause dissatisfaction among population. However, it remains uncertain whether people living in the current oppressive authoritarian regime in Russia will muster the bravery and resources to take action and organize large protest movements. ●

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Ukraine

Environmental and Security Linkages in Ukraine and Its Donbas Region

by **Nickolai Denisov** and **Alla Yushchuk**

When embarking on assessing the environment and security linkages in Eastern Europe in 2007, the international Environment and Security initiative took the same participatory approach it had previously pursued in other regions of the pan-European space – South-Eastern Europe, Central Asia and the Southern Caucasus. The process entailed initial research desk studies by national and international experts coupled with a broad participatory review, discussions and mapping of national and regional environmental and security issues. Among those brought together for this purpose within Belarus, Ukraine, and the Republic of Moldova were officials representing the ministries of the environment and foreign affairs, interior and security, numerous sectoral agencies, academia, NGOs, national and international experts, and projects.

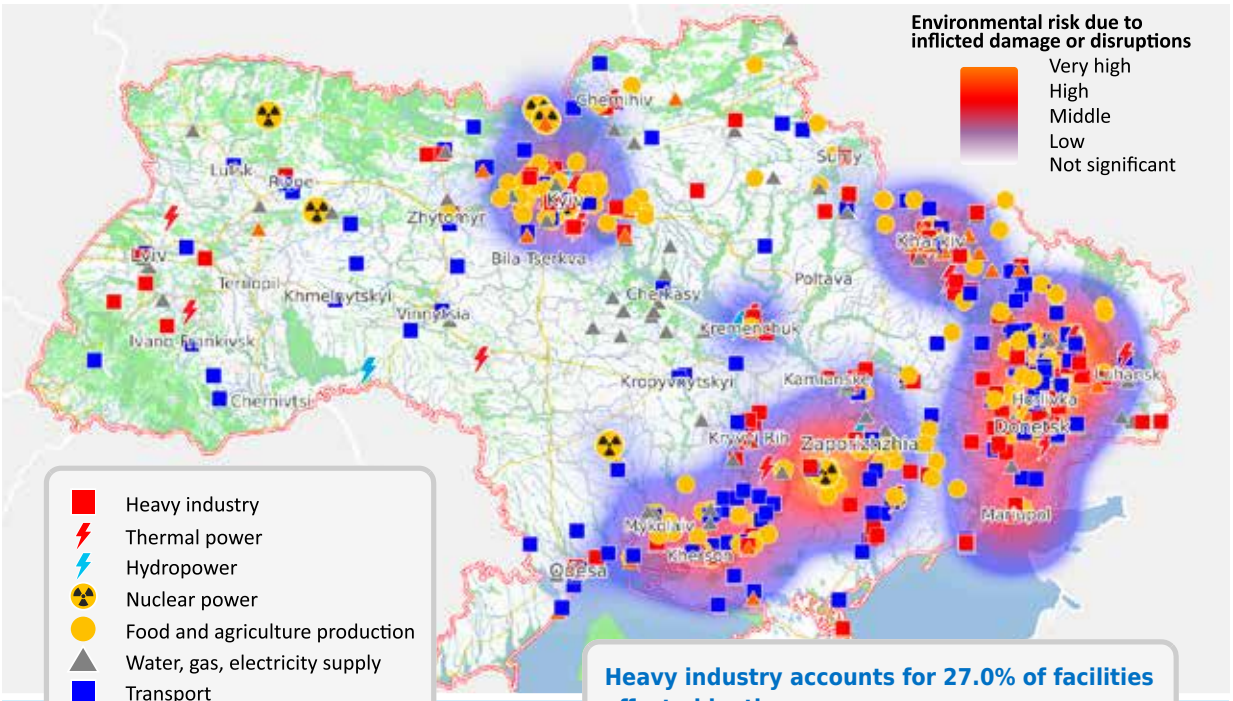
The result was a comprehensive assessment report[1] with numerous maps that summarized the various environment and security issues in a condensed form. The regional synthesis map highlighted regional hotspots, which in a diplomatically correct way were then called "priority areas", with the potential for issues, tensions and, therefore, also opportunities for dialogue and cooperation along the environment-security interface. Somewhat surprisingly for certain observers at that time, but less surprisingly today, Donbas, Crimea and Transnistria as well as the long Ukraine-Belarus border were on that map.

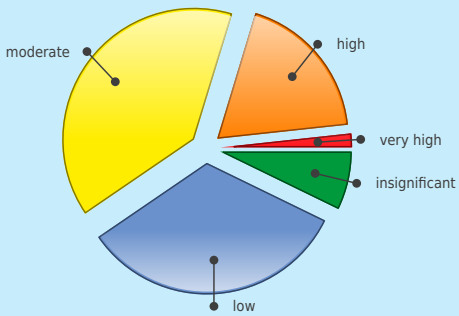
Repeated Attacks on Industrial Facilities and Critical Infrastructure

Prior to 2014, the Donbas region in eastern Ukraine had the highest concentration of industrial facilities in the country, including chemical and metallurgical plants as well as plentiful coal mines. Among them were more than 4,500 potentially hazardous enterprises. Consequently, Russia's hybrid war waged in Donbas between the spring of 2014 and the full-scale invasion of Ukraine in February 2022 resulted in both direct "physical" as well as institutional consequences. Many of them have by now been

ENVIRONMENTAL RISKS

During February 2022 to February 2023, 818 industrial or critical infrastructure facilities in Ukraine were damaged or disrupted by military actions. Among them are the most environmentally unsafe ones: the Kakhovka Hydropower Plant named after P.S. Neporozhnyi, the Chornobyl Nuclear Power Plant, the Zaporizhzhia Nuclear Power Plant, the Kyiv Hydropower Plant, the Dnipro Hydropower Plant.

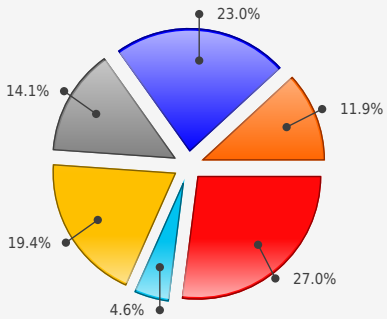




Environmental hazards of the affected facilities

Industrial or critical infrastructure facilities that were damaged or disrupted from February 2022 to February 2023 represent different levels of environmental hazards: insignificant, 7.2%; low, 33.3%; moderate, 39.2%; high, 18.6%; very high, 1.7%.

Heavy industry accounts for 27.0% of facilities affected by the war



- Heavy industry
- Power generation
- Food and agriculture
- Resource supply
- Transport
- Other

Zoï Environment Network (Switzerland) REACH UN environment programme OSCE Organization for Security and Co-operation in Europe Project Co-ordinator in Ukraine

SOURCE: ECODOZOR.ORG ANALYTICAL BULLETIN FEBRUARY 2022–FEBRUARY 2023

Chemical graveyards with toxic substances remain in the area completely unattended, and contaminated water in the surrounding area has already become unsuitable for use.

analyzed and summarized in various publications, including those prepared in cooperation with Zoï by the OSCE.[3]

Repeated attacks on industrial facilities and critical infrastructure, including chemical plants, water treatment facilities and similar, may not have produced a spectacular large-scale environmental disaster in Donbas, aside from the inevitable accumulation of effects over time. However various incidents did result in known spills of chemicals and waste, burnt fuel tanks etc., all threatening people's health and ecosystems. Some of these incidents could have been avoided, had access been easier to the area close to the "line of contact"; as it was, the situation meant that even regular situations could not be managed: one example was the overflow of a storage reservoir with one million liters of animal waste south of Bakhmut in 2016. The facility was targeted by shelling multiple times, preventing its regular maintenance that would have contained the spill. Many towns and smaller settlements were also devoid of basic services, making water supply, wastewater treatment and waste management extremely challenging if not impossible.

According to data compiled and analyzed through the Donbas Environmental Information System (DEIS) developed and maintained with the OSCE, five hundred cases of operational disruption at industrial enterprises due to hostilities were recorded in 2014–2021 in the Donetsk and Luhansk oblasts. The majority of these cases happened in 2014–2016.[4] The nature of these incidents ranged from discontinued electricity, gas and water supplies to disruption of industrial cycles and destruction of enterprises and their infrastructure, potentially polluting surface and ground water and affecting drinking water supplies. Lacking direct solid evidence of specific linkages between such incidents and, for instance, the pollution of surface waters, a 2017 review revealed increased pollution likely caused, inter alia, by shutting down malfunctioning treatment plants.[5] A third of the recorded disruptions was related to the mining industry, a quarter to water supply facilities. Ten per cent of the cases were linked to the chemical and coke-chemical industry.[6]

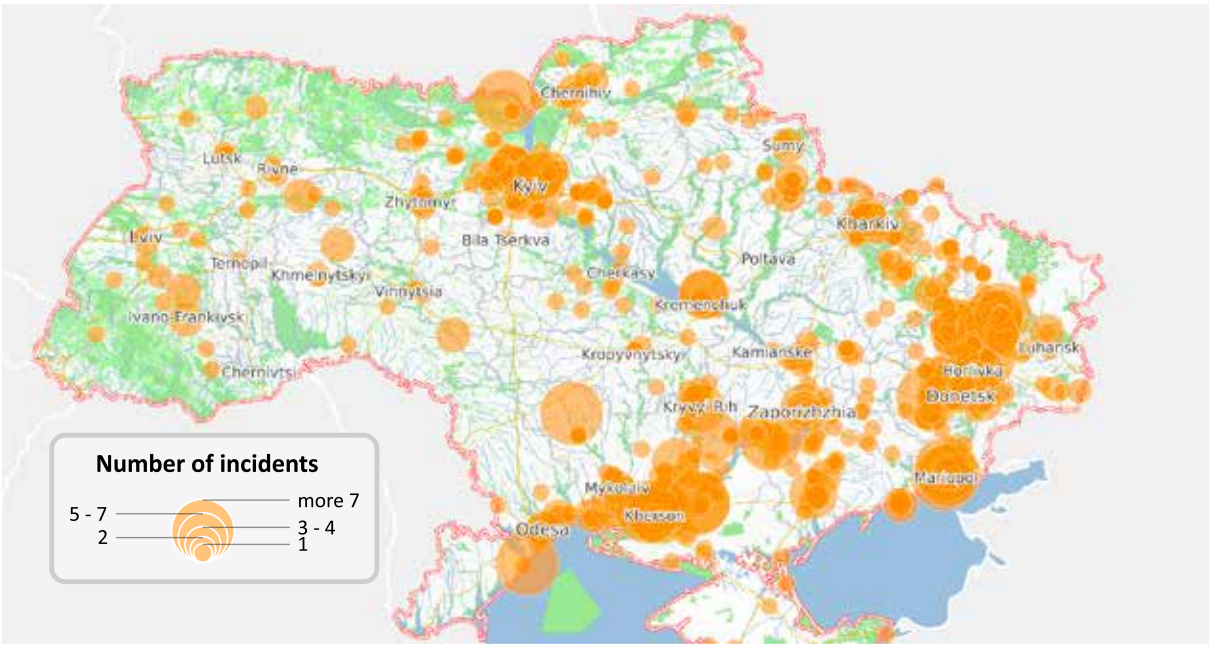
Flooded Coal Mines are Polluting Groundwater

A widespread problem has been the gradual flooding of Donbas's abundant coal mines: first due to electricity shortages, later by conscious decisions in areas not controlled by Ukraine. At the beginning of the armed conflict in 2014 the majority of Donbas mines were located outside of the areas then controlled by Ukraine's government.[7] By 2019, 39 coal mines were completely or partially flooded. As a result of gradual flooding, highly contaminated mine water levels have risen, on their way polluting groundwater and surface waters supplying the population and industries. Some of the flooded locations had significant stocks of hazardous materials; these included Yunyi Kommunar (Yunkom) coal mine with a radioactive capsule left over by a 1979 nuclear explosion. As the process continues, the polluted water will eventually reach the Siverskyi Donets river, which flows into the Sea of Azov. Besides pollution, this process has caused the waterlogging and deformation of the ground, with potential long-term consequences for roads, pipelines, communications, and buildings.[8]

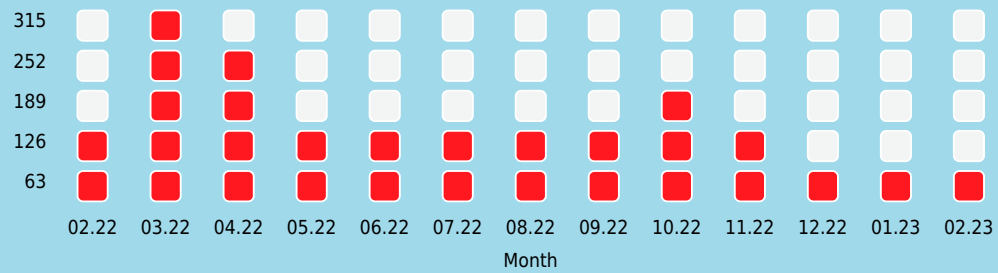
Another source of industrial hazard has been a large amount of hazardous waste accumulated in the region: Donbas hosts almost half of all Ukraine's liquid tailings storage facilities. As of 2019, 125 of these were located in areas not controlled by the government. The most vulnerable are industrial facilities located along the "contact line"; as one example, the tailings dam at the Inkor and Co phenolic plant in the Donetsk oblast was damaged by shelling in 2016, causing the tangible risk of releasing of toxic chemicals into the environment.[9] At the abandoned decommissioned chemical plant in Horlivka, large volumes of hazardous chemicals and explosive compounds were removed from the site just before the start of military activities; however, cleaning works were not completed. Chemical graveyards with toxic substances remain in the area completely unattended, and contaminated water in the

DAMAGE TO INDUSTRY AND INFRASTRUCTURE

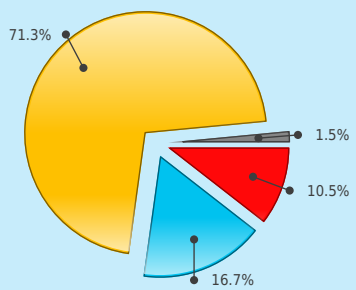
From February 2022 to February 2023, 1467 disruptions or accidents due to military actions were reporded at industrial enterprises and critical infrastructure. The highest number of incidents was recorded at the Zaporizhzhia Nuclear Power Plant (87), the Azovstal Metallurgical Plant (45), the Avdiivka Coke and Chemical Plant (37).



The average number of incidents was 113 cases per month



71.3% of the reports were related to the destruction of infrastructure



- Disruption of resource supply
- Breakdown of the technological cycle or facility management
- Destruction of infrastructure
- Dismantlement

31.6% of the reports of damage or disruption to industry or critical infrastructure happened in heavy industry, 17.1% in power generation, 12.7% in food and agriculture, 9.4% in resource supply, 21.8% in transport, 7.3% in other sectors.

Zoï Environment Network (Switzerland) REACH UN environment programme OSCE Organization for Security and Co-operation in Europe Project Co-ordinator in Ukraine

SOURCE: ECODOZOR.ORG ANALYTICAL BULLETIN FEBRUARY 2022–FEBRUARY 2023

surrounding area has already become unsuitable for use.

Along with the real threats of water pollution caused by military activities and the loss of control over part of the territory, disinformation about potential danger had also appeared in the local media. For instance, information was spread that Ukraine was going to use chemical and radiation agents to contaminate the region's water.[10] The motives for spreading such messages remain unclear; one reason could have been to prepare the ground for possible emergencies due to mismanagement at the most hazardous sites.

Donbas Water Supply System Under Stress

Water security in Donbas has always been under stress due to long-standing industrial pressure on the region's limited water resources. Military activities only deteriorated this situation. Water supply and treatment infrastructure located along the "contact line" was exposed to regular shelling, and various facilities have been damaged hundreds of times, leaving millions of people without access to a centralized water supply. In some cases, hazardous substances such as chlorine were released, putting at risk the environment and people alike. The largest number of disruptions was recorded at the Donetsk Filtration Station Plant and at several pumping stations on the Southern Donbas water pipeline and the Siverskyi Donets-Donbas Canal.[11] Nonetheless, notwithstanding the tremendous pressure, the Donbas water supply system has shown a relatively high degree of resilience: operated as one by *Voda Donbasa* – the company officially present at that time on both sides of the "line of contact" – it remained for a long time among very few "live tissues" still connecting the opposite sides on humanitarian grounds.

Following the 2014 events, Ukraine lost control over a third of protected areas in the Donetsk and Luhansk oblasts, which together made up more than 10% of the protected natural area in Ukraine. Some of the protected areas like Meotida national park were divided by the "line of contact" and could no longer be managed as single entities. Besides occupation, valuable nature was also damaged by hostilities, fortifications built in protected areas, and by the use and abuse of forests for cover. Animals were scared and killed by shelling, mines and unexploded munitions. Research has also shown that wildfires in 2015 fighting areas were 2–3 times more frequent than in the adjacent regions with similar weather;[12] this was both due to high-temperature impacts or shelling and to the difficulties of putting out fires near the front line. The illegal extraction of natural resources in protected areas included coal mining, logging and poaching.[13] Natural ecosystems along the "line of contact" have been changing, with certain species disappearing and others spreading irrepressibly, affecting the agricultural and epidemiological security of the region.

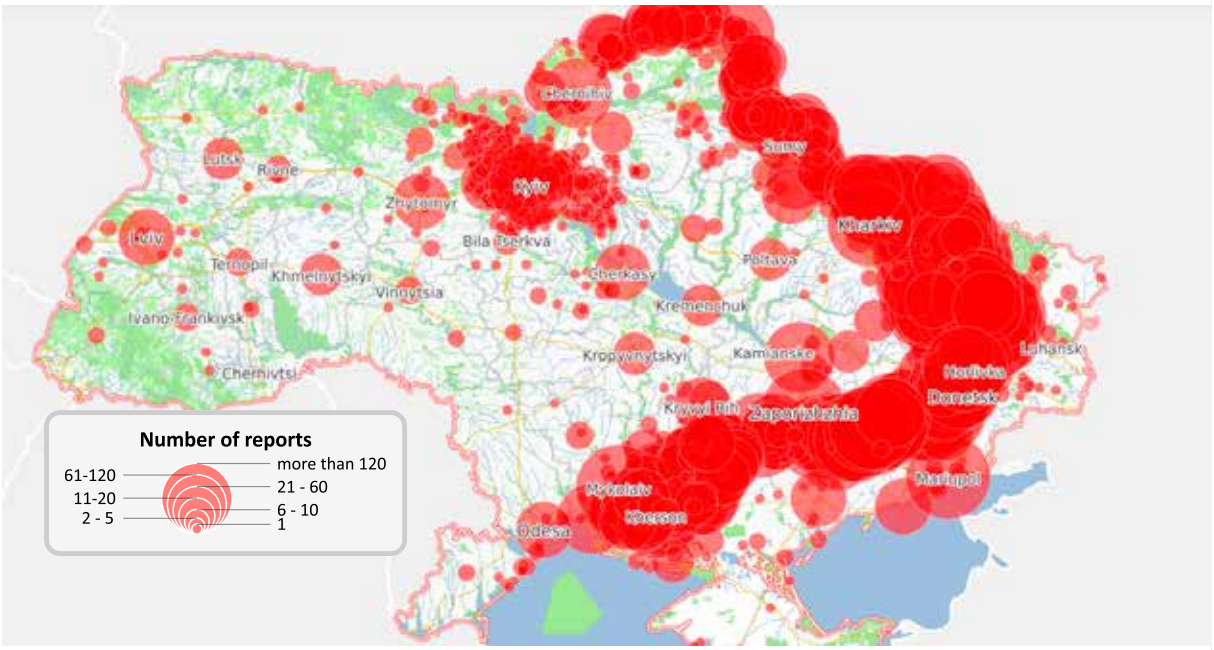
> The integrity of the region's environmental monitoring system, once among the most advanced in the country, has suffered dramatically.

Since 2014, Ukraine has not been able to ensure environmental administration in the territories it has not controlled. Formally, environmental governance in these territories is considered to have collapsed, since there has no longer been a legitimate basis for it as far as Ukrainian and international laws are concerned. In reality, certain environmental arrangements were established by de-facto authorities, with each of the occupied territories having set up institutional structures and "legislation frameworks" that aimed to project the image of regular state activities.[14] The integrity of the region's environmental monitoring system, once among the most advanced in the country, has suffered dramatically. Since 2014, Ukraine's government has lost access to large parts of the monitoring network and environmental data, and it is not known with any certainty how much monitoring has continued in the areas outside of government control.

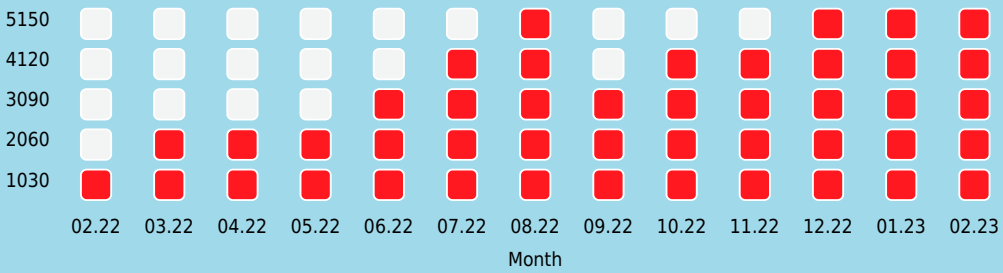
Attempts were made to bring environmental management and monitoring to the diplomatic agenda through the Trilateral Contact Group on Ukraine overseeing the Minsk agreements; however, not much success was reached with the exception of a 2015 mission organized to assess radiation hazards linked to Yunkom coal mine. In parallel, the Geneva-based Center of Humanitarian Dialogue attempted to facilitate

DAMAGE TO HUMAN SETTLEMENTS

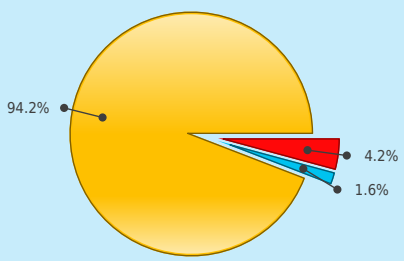
From February 2022 to February 2023 there were 39057 reports of damage or disruption at Ukraine's cities, towns and villages due to military actions. The largest number of cases was recorded in Bakhmut (687), Avdiivka (627), Marinka (557), Kharkiv (439), Soledar (433), Kherson (404), Vuhledar (384), Novomykhailivka (373).



The average number of reports was 3004 cases per month



94.2% of the reports were related to damage to settlements infrastructure



- Disruption of resource supply
- Disruption of daily operations
- Damage to settlements infrastructure

Among the the cases of disrupted supply of resource, 73.4% fall on electricity, 10.2% on water, 16.3% on gas.

Zoi Environment Network (Switzerland) REACH UN environment programme OSCE Organization for Security and Co-operation in Europe Project Co-ordinator in Ukraine

SOURCE: ECODOZOR.ORG ANALYTICAL BULLETIN FEBRUARY 2022–FEBRUARY 2023

unofficial environmental discussions across the "line of contact", with a series of expert-level meetings in neutral locations and basic field studies on both sides. A certain role in preventing environmental crises was performed by the OSCE Special Monitoring Mission to Ukraine that was deployed in the region at the start of military activities to observe and report on the security situation and to facilitate dialogue between parties. Notably, the Mission helped establish countless "windows of silence" for securing repairs to essential infrastructure and industries in the war zone.

It is noteworthy that environmental management in the parts of Donbas that remained under Ukraine's control received considerable national and international attention. Environmental recovery, monitoring and capacity building were recurrent elements of the state programs administered by the then Ministry of Temporarily Occupied Territories, and also benefited from significant investments from the local budget, including a boost to automated air quality observations in the Donetsk oblast. International technical assistance helped Ukraine address needs in water access, management and monitoring, and in supporting the environmental recovery of affected communities.

War in a Country With Operational Nuclear Power Plants

The perspective changed dramatically on February 24, 2022: what we had seen slowly lingering in Donbas since 2014 is what we see today all over Ukraine but on a much larger and more brutal scale. Modern warfare in a highly industrialized, urbanized, nature-rich and agriculturally important country like Ukraine is doomed to bring widespread damage. This war is also unique in being waged in a country with 15 operational reactors at 4 nuclear power plants, including the largest in Europe, Zaporizhzhia NPP, and with the Chornobyl site of the biggest nuclear disaster the world has seen to-date. The risk of a new nuclear disaster – whether intentional or accidental – unfortunately remains high.

Since the beginning of Russia's invasion, based on its past experience with DEIS, the Zoï Environment Network has established the *Ecodozor* information platform[15] which collates open-source information about specific incidents with likely environmental consequences. The platform is continuously enriched with new data, and according to its information collated per February 2023, various sources have reported a total of over 1,400 war-related incidents at over 800 facilities of industry or critical infrastructure all over Ukraine since the beginning of the full-scale invasion. During the same period, close to 40,000 cases of damage or disruption were reported in over 2,000 Ukrainian settlements, with 90% of the cases pertaining to physical destruction by shelling, bombing, missile attacks or similar.

Wide-ranging environmental consequences of these incidents are the pollution of air and water, enormous amounts of debris and other waste, damage to soils including the world's most fertile "black soils", and the destruction of natural ecosystems on land and at sea. Unfortunately, widespread mining, pollution with unexploded munitions, and the continuing hostilities all limit ground access to damaged areas. This severely restricts opportunities to verify the damage. Yet based on the number of incidents and the types of their locations, the highest concentration of environmental risks should be expected in and around Donbas, Kharkiv, Zaporizhzhia, Kherson and Kyiv regions.

According to the recent estimates by the Eastern European Branch of the Global Fire Monitoring Centre, around 350,000 hectares of forests burnt in 2022, with about 70% of them located in war-affected or occupied areas. Almost half of the Ukraine's protected nature area has experienced long-term or shorter-term occupation; and 40% of Ukraine's protected nature has at some point been within 20 kilometers of the front line, the proximity entailing a high likelihood of significant damage to ecosystems, animals and plants from the warfare, mines, and fortifications. Somewhat similar estimates must be valid for Ukraine's land area. And looking back at experiences from the aftermaths of WWI and WWII, cleaning up even the

already accumulated environmental remnants of this new war may take decades – if not centuries, ultimately depending on the political will, available resources and capacities.

Like in the case of Donbas previously, the war reduces Ukraine's ability to fully take care of its environment, with new war-caused problems adding to those which existed previously. While still strongly engaging with European environmental processes and meeting its obligations stemming from the EU-Ukraine Association Agreement, Ukraine now has fewer people, capacities and technology, as well as financial resources to conduct daily environmental work. Added to this is the need for new institutions and processes to specifically address the environmental impacts of the war and prepare the agenda for eventual post-war reconstruction. On the positive side, Ukraine may well become a springboard for best practices and modern technological solutions for integrating environmental protection with post-crisis reconstruction.

Regional and Global Consequences of the War

An important aspect of the environmental impact of the war are its regional and global consequences. Environmental pollution and the loss of biodiversity have already affected the Black Sea and the Sea of Azov. Looking back at Chornobyl, a potential nuclear disaster, even of a different nature or a smaller scale and depending on the prevailing winds, may affect immense areas at long distances from the place of the accident. Greenhouse gas emissions from military activities, destroyed infrastructure and burning vegetation will affect the global climate,[16] and so will the destruction of natural carbon sinks such as forests and grasslands. The emerging renaissance of fossil and nuclear power generation may delay answers to some of the burning climate and environmental problems, although the energy crisis precipitated by the war may at the same time also accelerate the ultimate shift to renewable energy.

With 10% of global wheat imports depending on Ukraine, the continued destruction of Ukraine's fertile lands will not help global food security and may even imperil global wilderness, as countries and continents will be increasingly tempted to explore alternative options. Similarly, renewed efforts to find fuel or minerals outside the war-affected region is starting to make some long-shelved extraction projects profitable again, threatening not only the environment but also local and indigenous populations in areas far away from Ukraine.

Meanwhile, around Ukraine, the war has brought to a halt a large part of previously active and important environmental cooperation over shared waters, protected areas and industrial accidents with transboundary consequences where such cooperation depended on the participation of Russia and Belarus. And globally, along with the generally worsening (geo)political context for international cooperation, the unavoidable increased attention to the humanitarian and livelihood crises caused by the war damages the capacity of the global community to fully engage with pollution, the loss of biodiversity and climate change.

Conclusion

Yet in addition to the enormous brutality of the warfare and the scale of its impacts, one difference from the past conflicts worldwide may somewhat paradoxically be in the much broader and stronger awareness of the environmental effects of this war. Quite a few Ukrainian and international organizations[17] are engaged in monitoring and recording environmental damage to support its comprehensive assessment, collecting legal evidence and planning eventual reconstruction. And media attention to the environmental dimension of the war has been unprecedented, owing much to the recognition and broadcasting of these issues by Ukraine.[18] Equally unprecedented are the concerted efforts of various organizations working in this field, which will hopefully make a difference to post-war justice and to Ukraine's reconstruction and recovery. ●

> The war reduces Ukraine's ability to fully take care of its environment, with new war-caused problems adding to those which existed previously.

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16 This also includes incidents outside the immediate conflict area, such as those at the North Stream and Druzhba pipelines.

17 Starting with Ukraine's Ministry of the Environment and Natural Resources, the State Environmental Inspectorate, the Specialized Environmental Prosecutor Office to national and international NGOs such as Zoï, CEOBS, PAX, REACH Initiatives, Ecoaction, Environment-People-Law, as well as international organisations including the OSCE, the UN and reconstruction and development banks.

18 Cf. President Zelensky's "peace formula" presented at the G20 summit in November 2022 which among its 10 points included putting an end to Russia's ecocide and the need for the immediate protection of the environment. Available at: https://www.president.gov.ua/en/news/ukrayina-zavzhdi-bula-liderom-mirotvorchih-zusil-yaksho-rosi-79141

Summary

Ecological Concerns in Transition

by **Florence Fröhlig**, **Tora Lane** and **Eglė Rindzevičiūtė**

Modernity presents a dividing line in human relations to nature. Through industrialization, the exploitation of human and natural resources became a crucial vehicle for technical and economic progress. This process has accelerated to the extent that, in spite of scientists' warnings made since at least 1960s, in 2023 societies face possible risks of global and planetary disasters threatening the earth in an unprecedented way. Yet even though the consequences of industrial modernization are to be measured on a global scale, modernity itself is not a universal global historical phenomenon. As researchers have demonstrated, societies in the global North and South developed their own forms of modernization as well as forms of coping with the problems resulting from modernity, such as the negative consequences of large scale industrial and agrarian technologies, the dependency on and the use of natural resources, as well as waste management. Since the 1960s emerging environmental science and systems planning posited the necessity to address the negative consequences of industrial modernization at local, regional, national, international, and global levels. Indeed, this challenge was so immense, that it led to the cooperation across the Iron Curtain between communist and liberal democratic regimes and the development of the planetary consciousness that eroded the Cold War partition.[1] The communist revolution in Lenin's words was electrification and Soviet power, the building of the electricity grid to fuel heavy industrial expansion and extraction of natural resources. This form of modernization initiated in the Soviet Russia in 1917 was extended to the Warsaw pact countries after the war, thus leaving a lasting imprint on European landscapes and societies.

We know this modernization in its forced, central large-scale planning of industry and in its handling of human and natural resources, and we know it from its many disastrous consequences, as well as different forms of censorship controlling the information surrounding them. Chornobyl has become emblematic in so many ways of the failure of this Soviet communist modernity, since the nuclear disaster also uncovered beyond the Iron Curtain how this modernity was failing to catch up with the West, especially in the development of high technology.[2] This lead to the formulation of the pervasive narrative of East European societies

as fundamentally lagging behind the West, expressed, for instance, by Jürgen Habermas who described the revolution of 1989/1991 as a "catch-up revolution" (*nachholende Revolution*). Yet, as we know today, the state socialist bloc was not lagging behind in all ways: for instance, some forms of environmental protection, clean up and conservation of natural resources were developed and the civil society increasingly actively engaged in the challenging of ruthless destruction of nature.[3] Furthermore, changing the system does not always lead to a better relationship between humans and the environment; or, if you wish, undoing communism does not always bring about a change in the system in this regard. This was particularly clear in those countries which did not embark on liberal democracy, such as, for instance, Russia and Kazakhstan, which have become resource states with large and devastating consequences for the environment. In the cases of European integration, some regulatory requirements of management of hazardous waste were relaxed leading to toxic disasters, such as red mud slide in Hungary.[4] And thus, as the forms change, one may ask to what extent particular paths of modernity or modernity as such, despite all its emancipatory promises and engagement with the environment, is ripe with destruction and unable to handle the scars and waste it leaves behind in its push towards progress.

> Several articles address the cruel and cynical manner of Soviet modernization and its continuation today.

If Soviet communism, as Boris Groys wrote in *The Communist Postscript*,[5] was lingual and marked by its ideological desire to control the media and other channels of information, capitalism works through silence. Yet, as opposed to the ideological framing of any economic system, nature speaks in its own way and of itself through the damage, the waste, the destruction, or disaster in an inexorable and inescapable manner. In and through nature we can very concretely observe the effects – the workings or failures of different ways of cultivating or exploiting the earth. Places, as the nexus of the environment, humans, and history, emerge as crucial entities to understanding the challenge of the current ecological situation. As Bruno Latour argued in *Down to Earth*,[6] ecology concerns us globally, while it also brings us back to the particular place we inhabit, or to the fact that a place is or is no longer a possible habitat. In the end, ecological concerns show very clearly how people on a local level are affected by forms of government in their relation to economic, industrial, and technological systems, and how and to what extent they can engage with these issues and exert influence on these matters of immediate concern.

In this State of the Region Report on *Ecological Concerns in Transition*, we follow different trajectories or interlinkages of the legacies of Soviet and Eastern European communist modernization, the different processes of transition in post-Soviet countries and their European integration both with regards to politics and the environmental consequences on a local and national level, as well as reflections on the current situation in relation to this past. Certain features stand out. To begin with, several articles address the cruel and cynical manner of Soviet modernization and its continuation today, especially in the post-Soviet sphere. In her essay on "murdered cities", Sandomirskaja follows the destruction of cities in post-war modernity from the bombing of Germany during the war, to the elimination of entire cities or parts of them for the sake of modernization in Eastern Europe, and as suggestive of the destructions of cities that we see in the war in Ukraine today. In a different key, Etkind examines the current Russian regime's disregard towards a transition towards a green economy with consequences both on a global and local level, a refusal to follow the current path of modernization that he terms "stopmodernism".

More concretely, Kasperski and Josephson examine how despite government decrees aiming to regulate the impact of industry on the environment, the Russian state and private enterprises continue to develop oil, gas, and mineral extraction as well as nuclear energy in the Russian part of the Arctic with significant impact on ecosystems. Waste management is a prominent issue in Russia since "recycling is almost non-existent: more than 90% of all municipal waste is stored at landfills," as Elena Gorbacheva writes. In her essay, Vladimirova examines how Indigenous people in the Russian and European Arctic live with waste and pollution, both in terms of coping with the consequences for the habitat and in forms of resistance to further exploitation. The problem with waste management does not only relate to the Arctic North.

An interesting parallel to Russia is presented here by

the case of Kazakhstan. Marc Elie follows the development from Soviet modernization, with immense costs for its people and nature, to the attempts or lack of attempts to reform the system and reduce the damage caused by fossil fuels and mineral ore extraction and processing. Like Russia, Kazakhstan has become a resource state, and he follows how efforts towards a green transition, such as the signing of the Treaty on the Non-Proliferation of Nuclear Weapons (1994), are counteracted by intensified extraction of uranium, and he asks if there can indeed be a "green extractivist future". Another interesting and more distant parallel in the post-Soviet sphere is that of Georgia given by Beril Ocaklı and Benedikt Ibele: where the construction of the Rikoti highway, shows us how economic concerns during the transition lead equally to a disregard of the effect on the environment and on the people, as well as government suppression of local resistance to the construction. Damir Arsenijević, in the case of Bosnia-Herzegovina, introduce the concept environmental violence to describe the process of "wasting" environments and human lives; in war-traumatized communities with abandoned houses and unguarded toxic industrial waste that kills daily, "cheap labor is the ultimate 'resource' being 'extracted'".

> The ongoing ecocide and contemporary societal challenge to the viability of human life on earth urges us to embrace an ecocritical perspective.

While there is a history of damage to the environment in terms of waste, insult to ecosystems, climate change, etc., there is also a history of resistance and activism. As Andrei Stsiapanau illustrates in his contribution on Belarus, the disastrous consequences of the Chornobyl accident paradoxically also contributed to mobilizing civil society against the development of more nuclear energy in the badly hit Vitebsk region towards the end of the Soviet era. In their country report on Estonia, Kadri Tüür, Aet Annist, and Mirjam Rennit follow the development of environmental activism in Estonia, while also asking to what extent activism in the east and west differ. The relation to the environment in the post-communist transitional Czech Republic is the topic of the country report written by Eva Richter. She examines why the Czech people, considering themselves a nation of nature lovers, have been reluctant to take action, and comes to the conclusion that it was the felt need of catching up with industrial development in the west that placed environmental concerns behind economic ones.

Although of course the former Soviet resource state represents a particular case in point, there are also apparent conflicts between state and private industry in states that are pending members or have become integrated into the European Union. Victor Pál shows with particular focus on the forestry industry and tourism in Hungary how nature is placed in the service of the nation and used for the sake of re-industrialization and of attracting investment. In her country report on Albania, Sara Persson follows the development and narrative of the Patos-Marinza oilfield in transition and shows that the modernization of technology in extraction and waste management did not lead to the promised reduction in pollution; on the contrary. Also, in the case of Finland, Markku Lehtonen and Matti Kojo ask whether the insistence on the stability and sustainability of Finnish nuclear waste management is not a consequence of political and economic priorities, rather than environmental concerns.

The legacy of the communist past and the transition to a sustainable relationship with the environment and EU regulations also form the subject of several country reports. There might emerge a risk that national governments, pursuing the goal of environmental preservation, destroy people's local environmental practices. In the country report on Latvia, Mikelis Grivins poses the question of what may be an incentive to make food systems more sustainable, while showing that the EU integration has not been sufficient in this respect. In Poland, Justyna Chodkowska-Miszczuk shows how the historical formation of farming, nature reserves, and energy play into EU integration in both positive and problematic ways. She argues for an increase in local activism or engagement with the transition to a green sustainable economy as the way to positive EU integration. A similar conclusion can be found in the country report from Bulgaria, where Svetoslava Toncheva examines the relationship between humans and wildlife in transition. She focuses in particular on how humans treat bears in the Rhodope mountains and argues that low levels of state intervention have led to an increase in bottom-up

initiatives that have proven fruitful for a sustainable relationship. And in Romania, while the transition to green sustainable forest management is hampered by a communist past that lingers on in the form of corruption, there are positive signs of a change in attitude. This reminds us of the fundamental importance of placing people's local environmental practices as well as Indigenous politics and ontologies at the center of our social movements for environmental justice.

If all contributions in this report converge in the imperative to connect the local to the global to prevent environmental and human casualties, they also demonstrate the damaging effect of anthropocentric logics on the environment. The conception of nature as a necessary resource for the development of the economy and profit-making has indeed proved to have limits and is a threat to human life on earth. The current warfare in Ukraine, as Nickolai Denisov and Alla Yushchuk show in their contribution, further demonstrates human beings' environmental carelessness. Yet the ongoing ecocide and contemporary societal challenge to the viability of human life on earth urges us to embrace an ecocritical perspective and to reflect on the substantive scope and limitations of mainstream environmentalism. And ironically, solutions to the contemporary environmental situation could be found among the people that were excluded or rather left behind in the waves of transitions. Thus, Indigenous people's long-lasting forms of relationships and kinship with nature might be an inspirational way to challenge and counter Western epistemologies of human/nature dualism. The contemporary societal challenge to human beings' viable future on earth requires us to learn both from human beings' harmful impact on the environment and from their harmonious co-existence with non-human beings. ●

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List of Authors

Andra-Cosmina Albulescu holds a PhD in geography and works as a research assistant at Tulnici Research Station via RECENT AIR Project, "Alexandru Ioan Cuza", University of Iași, Romania. Albulescu is also an associate assistant professor at the Department of Geography, Faculty of Geography and Geology at the same university. Her research work focuses on 1) vulnerability assessments (seismic vulnerability, hydrological vulnerability), 2) natural risks assessments and risk perception, and 3) forest cover dynamics and its forestry policy drivers.

Aet Annist is a social anthropologist and senior researcher in the project "Estonian Environmentalism in the 20th Century: Ideology, Discourses, Practices" at Tallinn University andanassociate professor at the Ethnology Department of the University of Tartu. Her PhD research from UCL focused on post-socialist rural fragmentation and dispossession in the context of community development programmes, which she has expanded in her later research to sociality in change, both post- and pre-collapse. In relation to the latter, she is currently doing fieldwork amongst environmental protest and adaptation groups in Estonia and the UK.

Per Angelstam is a professor at the Swedish University of Agricultural Sciences (SLU) and at the Inland Norway University of Applied Sciences. His research interests include the effects of environmental history and political culture on states and trends of biodiversity and on landscapes' contribution to human well-being.

Damir Arsenijević is a full professor of anglo-american literary and cultural studies at the University of Tuzla, Bosnia and Herzegovina. He is a literary theorist, activist, and a psychoanalyst in training. He is a convener of the Psychoanalytic Seminar Tuzla and a founder of the platform "Zemlja-Voda-Zrak" (https://zemljavodazrak.com) for intergenerational innovative work, located at the intersection of academia, art, and activism, on how to articulate and enact environmental justice in Bosnia and Herzegovina. He is an IRGAC/Rosa-Luxemburg-Stiftung fellow.

Justyna Chodkowska-Miszczuk is an associate professor at the Faculty of Earth Sciences and Spatial Management, the Nicolaus Copernicus University in Torun, Poland. She is a member of the Nicolaus Copernicus University Centre of Excellence IMSErt (Interacting Minds, Societies, Environments). Her research concentrates on the: smart and resilience concepts; energy-related social sciences; sustainable development; local development; embeddedness; renewables; mobility; climate change adaptation; energy policy; ecological awareness; biodiversity; socio-ecological transition of post-industrial cities; just transition.

Nickolai Denisov is the deputy director and co-founder of Zoï Environment Network, a non-profit organization in Geneva. He holds PhD in environment/geography and has over 20 years of international experience in environmental assessment, reporting, information management and communication. Denisovhas worked with the UN and other international organizations, development banks, bilateral assistance programmes, organized and contributed to numerous environmental studies and capacity-building projects, in particular in Eastern Europe, the Caucasus and Central Asia. This has included a series of regional assessments and activities under the UN-OSCE Environment and Security initiative, and years of assessing the environmental cost of fighting in Donbas. Since February 2022 his team has been monitoring the environmental consequences of the war in Ukraine.

Marc Elie is a senior researcher in history at the National Center for Scientific Research (France). He is the deputy-director of the Center for Russian, Caucasian, Central Asian and Central European Research. Marc Elie holds a PhD from the School for Advanced Studies in the Social Sciences (France). His fields are the environmental history of Soviet Kazakhstan and disasters in the Soviet Union. He works on droughts and erosion in the regions of the 'Virgin Land' Campaign and on the environmental health crisis of the late Soviet years.

Alexander Etkind is a professor of the Department of International Relations of Central European University in Vienna. He previously taught at the European University Institute at Florence (2013–2022), the University of Cambridge (2004–2013), and the European University at St. Petersburg (1999–2004). In 2021, he initiated the University of New Europe. Alexander defended his PhD in cultural history in Helsinki (1998), and since then supervised more then 30 PhD students. His current interests are the political aspects of the Anthropocene, global decarbonization and security in Eastern Europe. His new book, *Russia against Modernity*, is released by Polity in April 2023.

Florence Fröhlig is an ethnologist and senior lecturer at the School of Contemporary and Historical Studies at Södertörn University, Sweden. Besides her research interests concerning nuclear legacies, she is interested in issues concerning environmental memory and ecocriticism.

Mikelis Grivins is a professor at Riga Stradins University. His research interests include agro-food systems, consumer habits, rural development, transition and innovations. Currently, Grivins is engaged in studies analyzing the organization and impact of circular business models, rural digitalization and networks enabling transition in agro-food systems.

Elena Gorbacheva is a PhD-candidate at the Aleksanteri Institute, University of Helsinki, Finland. She is working in the project FLOWISION, funded by Kone Foundation for the years 2021–2024, where she studies environmental protests in Russia, focusing on the campaign against the landfill at the Shies railway station in the Arkhangelsk Oblast'. Her research interests include environmental movements, activism, state-civil society relations, electoral politics, contentious politics, and authoritarianism.

Benedikt Ibele is an advisor on biodiversity finance at the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. He worked as team leader for Georgia in the German Environment Programme South Caucasus for GIZ from 2017 to 2020, supporting the forest sector reform of Georgia.

Paul Josephson is professor emeritus in history, at Colby College, Waterville, Maine, and the author of books and articles on big science, technology and environment in the 20th century, including *The Conquest of the Russian Arctic* (Harvard, 2014).

Tatiana Kasperski has been a researcher at Pompeu Fabra University in Barcelona, Spain. She is a specialist on nuclear issues in former Soviet spaces and on radioactive waste politics and history. She is currently working on a nuclear environmental history of Ukraine at Södertörn University, Stockholm, Sweden.

Matti Kojo is an associate professor at the Department of Social Sciences, LUT University, Finland. He has also a resource agreement with the Faculty of Management and Business/Politics Unit, Tampere University, Finland. His research interests include nuclear power and nuclear waste policy, energy transition, public participation, acceptability, social license to operate, compensations, and electric vehicle policy.

Tora Lane is currently working as a research leader at the Centre for Baltic and East European Studies, CBEES, at Södertörn University, and also a project researcher in the project "Traces of Oblivion. Identity, Memory and Heritage in the Wake of a Nationalistic Turn", to which she contributes by studying traces of oblivion in post-soviet memory literature. In her research she has investigated aesthetic, philosophical and political issues of community, utopia and totality raised by Russian Modernism and the Russian Revolution.

Daniela Larion is a senior lecturer in the field of earth sciences, currently working at the Department of Geography, Faculty of Geography and Geology, "Alexandru Ioan Cuza" University of Iași, Romania. She received her PhD degree in Geography, with a thesis in Urban Climatology, in 2000. Ever since, she has performed research and teaching activities in Romania, as well as in several European Universities (e.g., UK, Norway, Switzerland). Her research focuses on environment and regional geography, applied and urban climatology, and didactics of geography, in accordance with her teaching activities.

Markku Lehtonen, Dr, is an interdisciplinary social scientist currently working at the Pompeu Fabra University in Barcelona and at the Universitat Autònoma de Barcelona. He is also associate professor (docent) at the University of Jyväskylä, Finland; Associate Researcher at the Groupe de Sociologie Pragmatique et Réflexive (GSPR), Ecole des Hautes Etudes en Sciences Sociales (EHESS) in Paris; and Associate Faculty at the Science Policy Research Unit (SPRU), University of Sussex. His current and recent cross-country comparative research has focused on the past, present, and future of nuclear megaprojects and technology promises, public controversies, participation in the areas of energy, environment, and sustainability, the role of international organizations in energy and environmental governance, and the role of indicators and evaluation in policymaking.

Michael Manton has a BSc in environmental science and a PhD in biology and currently works a scientific researcher at Vytautas Magnus University in Kaunas, Lithuania. His work experience includes environmental consultancy. Manton's current research interests focus on sustainable

forest management, nature conservation, spatial planning through understanding historical and current landscape development for human well-being.

Beril Ocaklı is a development practitioner turned academic. Currently, she is based at the Centre for East European and International Studies (ZOiS), Berlin where she leads the research project "China, the EU and Economic Development in Eastern Europe and Eurasia". As a critical geographer, she studies infrastructural processes and their governance, resource extractivism, society-nature relations and authoritarian repression in Central Asia and the South Caucasus. Before returning to academia, she led transdisciplinary development projects on resource governance on behalf of the German government, the EU and other multilateral organizations.

Pavel Otdelnov is an artist and lives and works in London, UK. Otdelnov has shown widely in Russia and abroad, in both public and private contexts. In 2021, Otdelnov became the Finalist of the Kandinsky Prize. In 2017, he became a Laureate of the Sergey Kuryokhin Contemporary Art Award (Special Prize of the French Institute). In 2020, he became the Winner of the Innovation State Prize in the nomination Artist of the Year. In 2020, Otdelnov was named Artist of the Year by Cosmoscow Foundation. Otdelnov's works are in the collections of the Tretyakov Gallery, the State Russian Museum, Uppsala Art Museum, Kalmar Art Museum, the Moscow Museum of Modern Art, the Pushkin Museum, as well as in public and private collections worldwide.

Viktor Pál is a Hungarian environmental historian, an associate professor at the University of Tampere and the University of Ostrava, and a visiting researcher at the University of Helsinki. He is the author of *Technology and the Environment in State-socialist Hungary: An Economic History* (Palgrave Macmillan, 2017) and with Stephen Brain has co-edited the collection of essays, *Environmentalism under Authoritarian Regimes. Myth, Propaganda, Reality* (Routledge, 2019).

Sara Persson (PhD) is a postdoctoral researcher at Södertörn University in business studies. Her research interests include corporate-community relations in extractive industry areas and practical consequences of discourses around CSR, sustainability and circular economy. She is currently working on a project about sustainability discourses in relation to the Swedish mining industry. She is also engaged in a project about circular economy in public procurement.

Mirjam Rennit is a social anthropologist. She obtained her MA degree from the University of Tartu. Her master's thesis dealt with the climate protest movement in Estonia with a special focus on how activists aim to make the issue of climate change understandable and urgent locally.

Eva Richter is an assistant professor at the Department of Sociology at Charles University in Prague. Her research interests include public responses to environmental and climate change policies, related theoretical concepts, measurement and methodology, environmentally-significant behaviors and practices, and risk in modern societies.

Eglė Rindzevičiūtė (PhD) is an associate professor of criminology and sociology, the Department of Criminology, Politics and Sociology, Kingston University London, the UK. She is the author of *The Power of Systems: How Policy Sciences Opened Up the Cold War World* (Cornell University Press, 2016) and *The Will to Predict: Orchestrating the Future through Science* (Cornell University Press, 2023). Dr Rindzevičiūtė is the principal investigator of the research project "Nuclear Spaces: Communities, Locations and Materialities of Nuclear Cultural Heritage (NuSPACES)" (2021–2024, funded as part of the European Union's Joint Programming Initiative for Cultural Heritage).

Irina Sandomirskaja is a professor of cultural studies at the Centre for Baltic and East European Studies, CBEES at Södertörn University. She holds a doctoral degree in theoretical linguistics. Her research interests are critical theory, memory and history, Russian 20th century cultural history, language literature, and film theory.

Andrei Stsiapanau is an associate professor at the Department of Diplomacy and Political Sciences at VMU, Lithuania.He was involved in several international research projects about nuclear energy history. His research interests include the history of the Soviet nuclear program, nuclear legacies and nuclear waste policies.

Svetoslava Toncheva is associate professor at the Institute of Ethnology and Folklore Studies with Ethnographic Museum, Bulgarian Academy of Sciences. Her research interests are focused on human-wildlife interactions (conflict and coexistence), multispecies/more-than-human dimensions of conservation and large carnivores.

Kadri Tüür is researcher in the project "Estonian Environmentalism in the 20th Century: Ideology, Discourses,

Practices" at Tallinn University and served as the head of the Estonian Centre for Environmental History (KAJAK) from 2018 to 2021. She is also editor-in-chief of *Studia Vernacula*, the journal of the Estonian Native Crafts Department of the University of Tartu Viljandi Culture Academy. Her PhD thesis applied semiotic methods to the analysis of written nature representations and her current research interests include ecocriticism, ecofeminism, blue humanities and animal representations.

Vladislava Vladimirova is an associate professor of anthropology at Uppsala University, and has undertaken field research in several regions of Circumpolar Eurasia. She has published extensively on indigenous and environmental governance and justice, gender, moral economy, and conservation of environmental and cultural heritage in the Arctic.

Alla Yushchuk is a consultant to Zoï Environment Network where she supports environmental assessment caused by military activities in Ukraine. She has over ten years of project management experience on a variety of environmental matters in Ukraine, including transboundary context with Belarus and Moldova. In her position as the National Project Officer at the OSCE Project Coordinator in Ukraine, she designed and implemented a number of projects to strengthen national capacity in the environment and security nexus, covering environmental assessment in conflict-affected areas in Donbas, monitoring and management of water resources, chemical emergency preparedness and response. Her areas of professional interests include environmental security, water management and environmental health. She holds a master's in environmental protection from the National University of Kyiv Mohyla Academy in Ukraine.

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Ninna Mörner (ed.), *The CBEES State of the Region Report 2021. The Many Faces of the Far Right in the Post-Communist Space. A Comparative Study of Far-Right Movements and Identity in the Region*, (CBEES: Huddinge, 2022), 190 pages. Available at: http://www.diva-portal.org/smash/get/diva2:1640388/FULLTEXT01.pdf

Centre for Baltic and East European Studies (CBEES)
Södertörn University, Stockholm
Alfred Nobels Allé 7
SE 141 89 Huddinge
Sweden
sh.se/cbees

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Ecological Concerns in Transition

The aim of the CBEES State of the Region Report 2022/23 is to present an insight to the different environmental challenges facing the region due to the legacy of communist modernity, the breakdown of communism and the transition period, as well as the ongoing war. It also sheds light on how political and economical concerns shape the approach to the environment and maps contemporary awareness and responses, forms of resistance and engagements with these issues in the region. The report gathers in-depth analyses of environmental concerns in transition in the region with particular focus on destruction and waste. It draws out common features, but also highlights local and cultural diversity in the region when it comes to waste, nature and activism.

The report consists of essays dealing with overall themes and 15 country reports. Together the individual contributions give a nuanced picture of the environmental threats in the region, the complexity linked to ideas of modernity and political and economic decision-making as well as values and rights claimed by Indigenous people and even nature itself. The current war in Ukraine adds another dimension to ecological concerns and bring new levels of destruction to the region.

The report is the third in a series of annual reports from CBEES (Centre for Baltic and East European Studies), reporting and reflecting on the social and political developments in the Baltic Sea Region and Central and Eastern Europe, each year from a new and topical perspective. The overall purpose with this initiative is to offer a publication that will be of great interest to fellow researchers, policy makers, stakeholders, and the general public.

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