

Slow Violence and the 1986 Chernobyl Disaster

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I. Introduction

On April 26, 1986, the fourth reactor of the Chernobyl nuclear power plant near the town of Pripjat in the north of the former Ukrainian Soviet Socialist Republic exploded. The explosion exposed the core and “threw clouds of radioactive material over the surrounding area.”¹ The government of the USSR was slow to react and initially withheld information about the disaster from the public as well as the international community. When high levels of radionuclides were detected in Scandinavian countries, Soviet authorities revealed that a serious nuclear disaster had happened at the Chernobyl nuclear power plant.² Even then, however, the government tried to downplay the extent of the catastrophe.

Radioactive contamination spread over vast territories of Europe, Middle East, Northern Africa, Asia, and North America.³ Estimates show that 50 million curies of radiation were released into the atmosphere – “the equivalent of 500 Hiroshima bombs.”⁴ Some 150,000 sq. km (57,915 sq. miles) of modern day Belarus, Russia, and Ukraine alone are considered to be contaminated.⁵ Initially, the Soviet government created the Chernobyl exclusion zone spanning the radius of 30 km (19 miles) around the damaged reactor.⁶ Later it was expanded to cover over 4,000 sq. km

¹ Richard Gray, “The True Toll of the Chernobyl Disaster,” *BBC Future*, July 25, 2019, <https://www.bbc.com/future/article/20190725-will-we-ever-know-chernobyls-true-death-toll>.

² Roman Fedorov, “Health Consequences of Chernobyl Disaster in Europe in General and in Norway in Particular. Literature Review and Ecological Study,” 2012, <https://munin.uit.no/bitstream/handle/10037/4640/thesis.pdf;jsessionid=20995D471B2243F3BB3E17B621DC7F5D?sequence=2>.

³ Alexey Yablokov and Vassily Nesterenko, “Chapter I. Chernobyl Contamination: An Overview,” in *Chernobyl: Consequences of the Catastrophe for People and the Environment*, (Annals of the New York Academy of Sciences, 2009), 5, <https://nyaspubs-onlinelibrary-wiley-com.ezproxy.library.tufts.edu/doi/epdf/10.1111/j.1749-6632.2009.04820.x>.

⁴ Serhii Plokyh, “The Chernobyl Cover-Up: How Officials Botched Evacuating an Irradiated City,” *History*, updated May 10, 2019, <https://www.history.com/news/chernobyl-disaster-coverup>.

⁵ Richard Gray, “The True Toll of the Chernobyl Disaster,” *BBC Future*.

⁶ Zhanna Bezpiatchuk, “The People Who Moved to Chernobyl,” *BBC*, https://www.bbc.co.uk/news/resources/idt-sh/moving_to_Chernobyl.

(about 1,600 sq. miles).⁷ The purpose of this zone is to restrict access to the most dangerous areas, minimize the spread of radiological contamination, and conduct monitoring activities. Although it is illegal to live inside the exclusion zone, 130 to 150 people still do.⁸ Additionally, more and more people move into the areas close to the zone.

According to the International Atomic Energy Agency, the explosion resulted in the immediate deaths of 2 plant workers.⁹ Twenty-nine of the firemen and emergency clean-up workers died in the first 3 months after the accident.¹⁰ Additionally, about 200,000 people were displaced due to the meltdown.¹¹

These numbers, however, do not reflect the true impact of the Chernobyl disaster. The catastrophe has become synonymous with human suffering and has brought new concepts into the lives of Ukrainians, Russians, and Belarusians (since these geographical areas were affected the most), such as “children of Chernobyl,” “Chernobyl heart,” “Chernobyl dust,” and “Chernobyl collar” (referring to thyroid disease).¹²

In December 2010, the Ukrainian government concluded that the area around the Chernobyl nuclear plant is safe for short-term stays and opened it up for visitors. It is, however, unclear what scientific evidence this conclusion is based on. The tourists are restricted to certain areas and can only visit as a part of a group tour; and there are radiation checkpoints throughout

⁷ Zhanna Bezpiatchuk, “The People Who Moved to Chernobyl,” *BBC*.

⁸ *Ibid.*

⁹ “Frequently Asked Chernobyl Questions,” *IAEA*, <https://www.iaea.org/newscenter/focus/chernobyl/faqs>.

¹⁰ *Ibid.*

¹¹ *Ibid.*

¹² Alexey Nesterenko, Vassily Nesterenko, and Alexey Yablokov, “Introduction: The Difficult Truth About Chernobyl,” in *Chernobyl: Consequences of the Catastrophe for People and the Environment*, (Annals of the New York Academy of Sciences, 2009), 1, <https://nyaspubs-onlinelibrary-wiley-com.ezproxy.library.tufts.edu/doi/epdf/10.1111/j.1749-6632.2009.04819.x>.

the tour.¹³ Additionally, tourists are not allowed to touch any structures or plants, and they are prohibited from sitting or placing anything on the ground.¹⁴ According to the Tourism and Promotion Department of the Kyiv City State Administration, an estimated 60,000 tourists visited Chernobyl in 2018.¹⁵ The overwhelming majority of visitors come from Western Europe and North America.

This paper argues that such commercialization of the exclusion zone completely ignores the horrors that people survived, and the post-accident reality that many Ukrainians live in and struggle with to this day. While wealthy foreigners consider the Chernobyl area to be a fun and extraordinary attraction, and the tour companies profit from this lucrative business, many Ukrainians and people in other affected countries continue to quietly suffer from the inward-driven slow violence that remains invisible to the rest of the world. This paper aims to shed a light on the environmental and public health consequences of the Chernobyl catastrophe in Ukraine. It draws a connection between the disaster and Rob Nixon's concept of slow violence. The paper concludes by providing recommendations to the Ukrainian government on how to ensure that the pain and trauma people suffered and continue to suffer due to the Chernobyl accident are not overlooked.

II. Public Health Consequences of the Chernobyl Catastrophe

Linking the effects of the radiation exposure to health issues has been a controversial task. Researchers argue that it takes decades before cancers or birth defects appear, and it is difficult to attribute them to a particular cause.¹⁶ However, several studies have been conducted since the 1986 explosion to identify the impacts of the Chernobyl disaster on public health. Experts agree that

¹³ Mindy Weisberger, "Is It Safe to Visit Chernobyl?" *Live Science*, June 7, 2019, <https://www.livescience.com/65673-is-visiting-chernobyl-safe.html>.

¹⁴ Mindy Weisberger, "Is It Safe to Visit Chernobyl?" *Live Science*.

¹⁵ *Ibid.*

¹⁶ Richard Gray, "The True Toll of the Chernobyl Disaster," *BBC Future*.

many generations will continue suffering the adverse effects of the 1986 explosion, and that studies to understand the full impact of the catastrophe will need to be conducted for many more years to come.

The Chernobyl catastrophe introduced a multitude of stressors. During the evacuation, families sometimes were separated, and pregnant women were often told to have abortions.¹⁷ The evacuees were not welcomed by members of host communities; they were heavily stigmatized due to their exposure to radiation.¹⁸

According to the research on mental health effects of the Chernobyl catastrophe conducted by Evelyn Bromet, there has been a two-fold increase in post-traumatic stress and anxiety disorders among the liquidators and adults living in contaminated areas.¹⁹ The study also found a relationship between exposure severity and post-traumatic symptom severity. Additionally, suicide rates among the liquidators (disaster clean up workers) are proven to be higher than those in the rest of the population.²⁰ Studies have also found that people who reported living in the Chernobyl affected areas of Ukraine had higher rates of addiction, particularly to alcohol.²¹

At both eleven and 19 years after the accident, researchers conducted an evaluation of the mental health of mothers with young children who had been relocated to Kyiv. Compared to control groups, “the evacuee mothers were twice as likely to have major depression, post-traumatic stress disorder, and poor self-rated health years later.”²²

¹⁷ Evelyn Bromet, “Mental Health Consequences of the Chernobyl Disaster,” *Journal of Radiological Protection* 32, no. 1 (2012): 72, <https://iopscience-iop-org.ezproxy.library.tufts.edu/article/10.1088/0952-4746/32/1/N71/pdf>.

¹⁸ Evelyn Bromet, “Mental Health Consequences of the Chernobyl Disaster,” *Journal of Radiological Protection*, 72.

¹⁹ *Ibid*, 71.

²⁰ Richard Gray, “The True Toll of the Chernobyl Disaster,” *BBC Future*.

²¹ *Ibid*.

²² Evelyn Bromet, “Mental Health Consequences of the Chernobyl Disaster,” *Journal of Radiological Protection*, 73.

In their book titled *Chernobyl: Consequences of the Catastrophe for People and the Environment*, Alexey Yablokov, Vassily Nesterenko, and Alexey Nesterenko provide an analysis of scientific literature from 1986 to 2004 on the impacts of the disaster. According to the authors, when areas of Ukraine heavily contaminated by radiation were compared to those less contaminated but similar in ethnography, economy, demography, and environment, there was “increased morbidity in the more contaminated territories, increased numbers of weak newborns, and increased impairment and disability.”²³

Morbidity in Ukrainian children (age 0 to 14) increased six-fold 10 years after the Chernobyl disaster.²⁴ Although there was a subsequently slight reduction in morbidity rates, 15 years after the meltdown, it was still 2.9 times higher than that before April 1986.²⁵ Moreover, morbidity among teenagers and adults in the heavily contaminated territories increased four-fold: “from 137.2 per 1,000 in 1987 to 573.2 in 2004.”²⁶ The children radiated in the womb generally had lower birth weight and got sick more often during the first year of life.²⁷ In the 15 to 18 years after the catastrophe, there has been an increase in the numbers of children with disabilities: “3.1 (per 1,000) in 2000, 4.0 in 2002, 4.5 in 2003, and 4.57 in 2004.”²⁸

From 1987 to 1989, it was common for children from contaminated areas to suffer from “functional disturbances of various organ systems,” which is indicative of hormonal and immune imbalance.²⁹ Studies show that by 1996, “those functional disturbances had become chronic

²³ Alexey Yablokov, “Chapter II. Consequences of the Chernobyl Catastrophe for Public Health,” in *Chernobyl: Consequences of the Catastrophe for People and the Environment*, (Annals of the New York Academy of Sciences, 2009), 42, <https://nyaspubs-onlinelibrary-wiley-com.ezproxy.library.tufts.edu/doi/epdf/10.1111/j.1749-6632.2009.04822.x>.

²⁴ Ibid, 45.

²⁵ Ibid, 45.

²⁶ Ibid, 46.

²⁷ Ibid, 45.

²⁸ Ibid, 46.

²⁹ Ibid, 45.

pathological processes with long-term relapses that were relatively resistant to treatment.”³⁰ Additionally, recent research found increased levels of damage and instability in the genomes of children who were either exposed during the disaster, or were born to parents who were exposed, which represents a significant risk of cancer.³¹ According to Alexey Yablokov, “somatic chromosomal mutations, mutations causing congenital malformations, genetic polymorphism of proteins, and mutations in minisatellite DNA” are only some of the genetic changes caused by the radioactive contamination.³² The author argues that the majority of genetic changes linked to the Chernobyl disaster will not even become apparent for several generations.³³

Peter Mitchell in his 1999 research found that incidence of thyroid cancers among Ukrainian children had increased ten-fold since the accident.³⁴ Individuals who were younger than 4 years old or were *in utero* at the time of the meltdown were at the highest risk, “accounting for 42% of the cases.”³⁵ Diseases of endocrine system became the main cause of disability among children in highly contaminated territories.³⁶ Additionally, within the first 2 years after the explosion hormonal imbalance became common among people in affected areas. Both boys and girls “developed increased insulin synthesis, and girls developed elevated testosterone levels.”³⁷

Studies also show that Chernobyl radiation suppresses the immune system, which leads to an increase in the frequency of acute and chronic diseases as well as infections. Occurrences of

³⁰ Alexey Yablokov, “Chapter II. Consequences of the Chernobyl Catastrophe for Public Health,” in *Chernobyl: Consequences of the Catastrophe for People and the Environment*, 45.

³¹ Richard Gray, “The True Toll of the Chernobyl Disaster,” *BBC Future*.

³² Alexey Yablokov, “Chapter II. Consequences of the Chernobyl Catastrophe for Public Health,” in *Chernobyl: Consequences of the Catastrophe for People and the Environment*, 76.

³³ *Ibid*, 76.

³⁴ Peter Mitchell, “Ukrainian Thyroid-Cancer Rates Greatly Increased Since Chernobyl,” *The Lancet* 354, no. 9172 (July 3, 1999): 51, [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(05\)75320-4/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(05)75320-4/fulltext).

³⁵ *Ibid*, 51.

³⁶ Alexey Yablokov, “Chapter II. Consequences of the Chernobyl Catastrophe for Public Health,” in *Chernobyl: Consequences of the Catastrophe for People and the Environment*, 80.

³⁷ *Ibid*, 80.

chronic tonsillitis, hypertrophy of the adenoid glands and tonsils, and an increased frequency of lymphadenopathies became typical after the 1986 disaster, especially in children.³⁸

Another consequence of the Chernobyl catastrophe is accelerated aging due to exposure to ionizing radiation.³⁹ Findings show that “biological ages of inhabitants from the radioactive contaminated territories of Ukraine exceed their calendar ages by 7 to 9 years.”⁴⁰ Early aging is especially apparent among the liquidators of the fallout: many of them develop diseases about 15 years earlier than the average population.⁴¹ The biological ages of liquidators are also up to 15 years older than their calendar ages.

This section provided a brief overview of the health consequences of the Chernobyl catastrophe. As time has progressed, less and less studies have been conducted assessing the long-term health effects of the 1986 disaster. However, this trend should be reversed, especially given the fact that individuals born in the wake of the nuclear fallout are now old enough to have children of their own. These children are most likely experiencing adverse health effects related to their parents’ exposure.

III. Environmental Consequences of the Chernobyl Catastrophe

The 1986 Chernobyl disaster had major adverse effects on ecosystems in the Northern Hemisphere in general, and in Ukraine, Belarus, and Russia in particular. Radionuclides were absorbed by plants and later by animals.⁴² In the exclusion zone, researchers documented “increased mortality of coniferous plants, soil invertebrates and mammals, as well as reproductive

³⁸ Alexey Yablokov, “Chapter II. Consequences of the Chernobyl Catastrophe for Public Health,” in *Chernobyl: Consequences of the Catastrophe for People and the Environment*, 89.

³⁹ *Ibid.*, 55.

⁴⁰ *Ibid.*, 55.

⁴¹ *Ibid.*, 55.

⁴² “Chernobyl 30 Years On: Environmental and Health Effects,” *European Parliament*, April 2016, 1, [http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/581972/EPRS_BRI\(2016\)581972_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/581972/EPRS_BRI(2016)581972_EN.pdf).

dysfunction in plants and animals.”⁴³ Furthermore, in the years following the meltdown, genetic anomalies in plants and animals attributable to radiation have been registered.⁴⁴

Following the meltdown, vegetation – specifically mushrooms and berries – and animals in forests and mountain areas have shown a particularly high uptake of radiocesium (¹³⁷Cs).⁴⁵ Natural decontamination of forests is proceeding “at less than 1% per year,” which is significantly slower compared to the other ecosystems.⁴⁶ Additionally, studies show that radioactive contamination has reduced the speed of biomass decomposition, leading to the accumulation of dead wood and slowing down growth of plants.⁴⁷ This increases the possibility of forest fires releasing radionuclides contained in trees.

Chernobyl radioactive contamination spread across the Northern Hemisphere for weeks after the explosion, and it eventually ended up in water bodies.⁴⁸ Many Belarussian, Ukrainian, Russian, Latvian, and Lithuanian rivers were shown to be contaminated after the catastrophe. Contamination levels have remained relatively high for years, “because some radionuclides were transferred from contaminated catchment soils to water bodies.”⁴⁹ The most contaminated lakes are the so-called “closed” lakes – those with limited inflowing and outflowing streams.⁵⁰ Concentrations of ¹³⁷Cs in fish in some of these lakes will remain high for a significant time into

⁴³ “Chernobyl 30 Years On: Environmental and Health Effects,” *European Parliament*, 4.

⁴⁴ *Ibid*, 4.

⁴⁵ “Environmental Consequences of the Chernobyl Accident and Their Remediation: Twenty Years of Experience,” *UN Chernobyl Forum*, August 2005, 5, <https://www-ns.iaea.org/downloads/rw/meetings/environ-consequences-report-wm-08.05.pdf>.

⁴⁶ “Chernobyl 30 Years On: Environmental and Health Effects,” *European Parliament*, 4.

⁴⁷ *Ibid*, 4.

⁴⁸ Alexey Nesterenko, Vassily Nesterenko, and Alexey Yablokov, “Chapter III. Consequences of the Chernobyl Catastrophe for the Environment,” in *Chernobyl: Consequences of the Catastrophe for People and the Environment*, (Annals of the New York Academy of Sciences, 2009), 226, <https://nyaspubs-onlinelibrary-wiley-com.ezproxy.library.tufts.edu/doi/epdf/10.1111/j.1749-6632.2009.04830.x>.

⁴⁹ “Chernobyl 30 Years On: Environmental and Health Effects,” *European Parliament*, 4.

⁵⁰ “Environmental Consequences of the Chernobyl Accident and Their Remediation: Twenty Years of Experience,” *UN Chernobyl Forum*, 6.

the future. It is noteworthy that for some populations living in close proximity to these “closed” lakes, the consumption of fish has become the main source of ^{137}Cs ingestion.⁵¹

Concentrations of radioactive contamination are significantly lower in sea water than in freshwater due to the large distance between the Black Sea and the Sea of Azov from Chernobyl.⁵² However, according to a study published by the International Atomic Energy Agency (IAEA) in 1996, “the Chernobyl accident had a measurable impact on the marine environment,” with radionuclide levels 2 to 3 times higher than pre-Chernobyl levels.⁵³

During the first few years after the 1986 Chernobyl accident, levels of radioactive materials in agricultural plants and animals decreased quickly due to various factors, such as weathering and decay.⁵⁴ The radioactivity levels continue to go down, although at a significantly slower rate. Problems remain in some rural areas of Ukraine where on small private farms dairy cows are grazing in pastures that are neither ploughed nor fertilized.⁵⁵ The milk produced on such farms often still has high levels of ^{137}Cs . According to the studies, most of the radioactive materials that people take in will be ingested through milk, meat, and crops for decades to come.⁵⁶

Following the meltdown, radioactive materials were deposited mostly on open surfaces, like lawns, parks, roads, and building roofs.⁵⁷ Since then, the surface contamination in urban areas

⁵¹ “Environmental Consequences of the Chernobyl Accident and Their Remediation: Twenty Years of Experience,” *UN Chernobyl Forum*, 6.

⁵² *Ibid.*, 6.

⁵³ Pavel Povinec, Scott Fowler, and Murdoch Baxter, “Chernobyl & the Marine Environment: The Radiological Impact in Context,” *IAEA Bulletin*, January 1996, 22, <https://www.iaea.org/sites/default/files/publications/magazines/bulletin/bull38-1/38106081822.pdf>.

⁵⁴ “Chernobyl Nuclear Accident,” *Green Facts*, <https://www.greenfacts.org/en/chernobyl/1-2/3-chernobyl-environment.htm#2>.

⁵⁵ *Ibid.*

⁵⁶ *Ibid.*

⁵⁷ “Environmental Consequences of the Chernobyl Accident and Their Remediation: Twenty Years of Experience,” *UN Chernobyl Forum*, 3.

has decreased due to the effects of wind, rain, traffic, and street washing. However, this has led to the secondary contamination of sewage systems and sludge storage.⁵⁸

This section provided a brief overview of the environmental impacts of the Chernobyl disaster. As is case with the public health consequences of the catastrophe, new research is needed to assess the long-term environmental effects.

IV. Slow Violence and the 1986 Chernobyl Catastrophe

Rob Nixon in his book titled *Slow Violence and the Environmentalism of the Poor* challenges the conventional understanding of violence as something instant and explosive. He introduces the concept of slow violence, which is “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.”⁵⁹ He distinguishes it from the structural violence by pointing out that slow violence “has a wider descriptive range in calling attention, not simply to questions of agency, but to broader, more complex descriptive categories of violence enacted slowly over time.”⁶⁰

The author pays attention to “the temporal dispersion of slow violence:” it is incremental, and its consequences are not immediately tangible.⁶¹ For these reasons, it often lacks visibility, especially today, when the newsworthiness is measured by the death toll, the number of injured, the number of buildings destroyed, etc. It is much more difficult to quantify slow violence. Nixon writes that “chemical and radiological violence, for example, is driven inward, somatized into

⁵⁸ Environmental Consequences of the Chernobyl Accident and Their Remediation: Twenty Years of Experience,” *UN Chernobyl Forum*, 3.

⁵⁹ Rob Nixon, “Introduction,” in *Slow Violence and the Environmentalism of the Poor*, (Harvard University Press, 2011), 2, <https://www.jstor.org/stable/j.ctt2jbsgw.4>.

⁶⁰ *Ibid*, 11.

⁶¹ Rob Nixon, “Slow Violence,” *The Chronicle of Higher Education*, June 26, 2011, <https://www.chronicle.com/article/Slow-Violence/127968>.

cellular dramas of mutation that – particularly in the bodies of the poor – remain largely unobserved, undiagnosed, and untreated.”⁶²

At the first glance, the Chernobyl disaster does not fit Nixon’s definition of slow violence neatly. It was after all an explosion that received plenty of visibility and media coverage. Scientific articles and books on this topic have been published, documentaries about it have been produced, and even video games featuring the Pripjat area have been created.

What does not receive due attention and visibility is the health and environmental impacts that the meltdown continues to have on people living in the vicinity of the affected areas. As Aleksandra Fučić of the Institute for Medical Research and Occupational Health in Zagreb, Croatia said: “In Chernobyl case, time is not healing. Time is a latency period for cancer development.”⁶³ Yet, for some reason less and less scientific research is being published about it, and people are even starting to relocate closer to the exclusion zone. Moreover, ever since the Ukrainian government opened the area to tourism, there has been a proliferation of blog-posts and news articles claiming that one gets “less radiation in the exclusion zone than on the plane.”⁶⁴

In the case of Chernobyl, it appears that the visibility it has received lately is having an adverse effect. After the recent HBO miniseries “Chernobyl” came out, there has been a significant increase in tourists visiting the exclusion zone. On one hand, this kind of tourism is a source of much-needed income for the country. On the other hand, the place where such a terrible tragedy happened has basically turned into an amusement park with tourists from all around the world taking happy selfies and even having photoshoots. How does this help honor the memory of those

⁶² Rob Nixon, “Introduction,” in *Slow Violence and the Environmentalism of the Poor*, 6.

⁶³ Richard Gray, “The True Toll of the Chernobyl Disaster,” *BBC Future*.

⁶⁴ “Chernobyl: The End of a Three-Decade Experiment,” *BBC*, February 14, 2019, <https://www.bbc.com/news/science-environment-47227767>.

whose lives were ruined by the 1986 disaster? How does this help those who became sick in the aftermath of the catastrophe? I believe that the Ukrainian government should have considered these and many more questions prior to opening up the exclusion zone to tourism.

V. Recommendations

This section provides recommendations to the Ukrainian government on how to ensure that with the opening of the exclusion zone to tourism, the victim's pain and trauma do not become overlooked. The most obvious recommendation would be to close the area to tourism. But since the government has chosen otherwise, my recommendations are the following:

1. No photos or videos should be allowed during the tour. This way, the visitors touring the exclusion zone will be paying better attention to the tour instead of trying to take a photo for their Facebook or Instagram page. Additionally, banning photos will deter people who are not actually interested in the history of the area from taking the tour.

2. Typically the tour company picks up tourists in Kyiv and drives them to the exclusion zone. During the trip, the guide should show tourists documentaries about the 1986 disaster, providing information on health consequences people in Ukraine continue to suffer. It would be particularly helpful if the documentaries included the stories of the liquidators and evacuees so that the tourists could understand the true cost of the nuclear fallout.

3. The companies that are allowed to give tours in the exclusion zone should allocate a set percentage of the profit from this kind of tourism either to scientific research on health and environmental consequences of the Chernobyl disaster or to help the victims of the disaster. As of

January 2018, “1.8 million people in Ukraine, including 377,589 children,” held the status of victims of the Chernobyl catastrophe.⁶⁵

VI. Conclusion

The Chernobyl catastrophe of April 26, 1986 has become synonymous with human suffering. Radioactive contamination spread over vast territories of the Northern Hemisphere, and it continues to affect lives of thousands of people globally.

In December 2010, the Ukrainian government opened the area around the Chernobyl nuclear plant for visitors. This paper argued that such commercialization of the exclusion zone completely ignores the horrors that people had survived, and the post-accident reality that many Ukrainians live in and struggle with to this day. While wealthy foreigners consider the Chernobyl area to be an extraordinary attraction, and companies profit from disaster tourism, many Ukrainians and people in other affected countries continue to quietly suffer from the inward-driven slow violence that remains invisible to the rest of the world.

This paper sheds light on the environmental and public health consequences of the Chernobyl catastrophe in Ukraine. It draws a connection between the disaster and Rob Nixon’s concept of slow violence. To conclude, it provided recommendations to the Ukrainian government on how to ensure that the pain and trauma people suffered due to the Chernobyl accident are not overlooked.

⁶⁵ Richard Gray, “The True Toll of the Chernobyl Disaster,” *BBC Future*.

Bibliography

Bezpiatchuk, Zhanna. “The People Who Moved to Chernobyl.” *BBC*.

https://www.bbc.co.uk/news/resources/idt-sh/moving_to_Chernobyl

Bromet, Evelyn. “Mental Health Consequences of the Chernobyl Disaster.” *Journal of Radiological Protection* 32, no. 1 (2012): 71-75, <https://iopscience-iop.org.ezproxy.library.tufts.edu/article/10.1088/0952-4746/32/1/N71/pdf>

“Chernobyl: The End of a Three-Decade Experiment.” *BBC*, February 14, 2019.

<https://www.bbc.com/news/science-environment-47227767>

“Chernobyl Nuclear Accident.” *Green Facts*, <https://www.greenfacts.org/en/chernobyl/1-2/3-chernobyl-environment.htm#2>

“Chernobyl 30 Years On: Environmental and Health Effects.” *European Parliament*, April 2016.

[http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/581972/EPRS_BRI\(2016\)581972_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/581972/EPRS_BRI(2016)581972_EN.pdf)

“Environmental Consequences of the Chernobyl Accident and Their Remediation: Twenty Years of Experience.” *UN Chernobyl Forum*, August 2005. <https://www-ns.iaea.org/downloads/rw/meetings/environ-consequences-report-wm-08.05.pdf>

Fedorov, Roman. “Health Consequences of Chernobyl Disaster in Europe in General and in Norway in Particular. Literature Review and Ecological Study.” 2012.

<https://munin.uit.no/bitstream/handle/10037/4640/thesis.pdf;jsessionid=20995D471B2243F3BB3E17B621DC7F5D?sequence=2>

“Frequently Asked Chernobyl Questions.” *IAEA*.

<https://www.iaea.org/newscenter/focus/chernobyl/faqs>

Gray, Richard. "The True Toll of the Chernobyl Disaster." *BBC Future*, July 25, 2019.

<https://www.bbc.com/future/article/20190725-will-we-ever-know-chernobyls-true-death-toll>

Mitchell, Peter. "Ukrainian Thyroid-Cancer Rates Greatly Increased Since Chernobyl." *The Lancet* 354, no. 9172 (July 3, 1999).

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(05\)75320-4/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(05)75320-4/fulltext)

Nesterenko, Alexey, Vassily Nesterenko, and Alexey Yablokov. *Chernobyl: Consequences of the Catastrophe for People and the Environment*. Annals of the New York Academy of Sciences: 2009. <https://nyaspubs-onlinelibrary-wiley-com.ezproxy.library.tufts.edu/toc/17496632/2009/1181/1>

Nixon, Rob. "Slow Violence." *The Chronicle of Higher Education*, June 26, 2011.

<https://www.chronicle.com/article/Slow-Violence/127968>

Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Harvard University Press: 2011. <https://www.jstor.org/stable/j.ctt2jbsgw.4>

Plokhyy, Serhii. "The Chernobyl Cover-Up: How Officials Botched Evacuating an Irradiated City." *History*, updated May 10, 2019. <https://www.history.com/news/chernobyl-disaster-coverup>

Povinec, Pavel, Scott Fowler, and Murdoch Baxter. "Chernobyl & the Marine Environment: The Radiological Impact in Context." *IAEA Bulletin*, January 1996.

<https://www.iaea.org/sites/default/files/publications/magazines/bulletin/bull38-1/38106081822.pdf>

Weisberger, Mindy. "Is It Safe to Visit Chernobyl?" *Live Science*, June 7, 2019.

<https://www.livescience.com/65673-is-visiting-chernobyl-safe.html>