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Subject: «Environmental crises and migration. The biopolitics of a future».

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Abstract: After the Enlightenment of the 18th century and the subsequent rapid industrialization processes, the evolution of sciences and technologies was enormous. Modernity brought changes in different spheres of the social and political life of the citizens as well as to the human-environment relationship. After the 1917 Bolshevik revolution, modernity processes in the Soviet Union followed the same path and engendered more or less the same destructions in the aforementioned relationships. The nuclear accident of Chernobyl, that led to the permanent migration of populations and affected negatively the whole planet contributed to the subsequent collapse of Soviet Union. As recent attention has focused on environment and migration, this study contributes to later approaches by problematizing migration and environmental disasters as a biopolitical phenomenon using as case study the Chernobyl accident. Biopolitics issues include radiation and migration risks. Since radiation cannot be seen or felt, problems related to the so-called radiation exposure safety level become political issues involving the scientific, social and political construction of invisible reality, the definition of its meanings for human health and the subsequent management of the migrating populations. The purpose of this thesis is to present how biopolitics works within the frame of environmental crisis migration through the Chernobyl disaster.

Key words: environmental crisis, climate change, environmental migration, human rights, forced migration, Soviet Union, Chernobyl

CONTENTS

INTRODUCTION:

Last year was unbearable in my birth place. During the summer the temperature was extremely high for this part of the planet. Heavy rains and severe snowfalls paralyzed the state infrastructure. On sunny days the African dust covered the sky with its yellow cloud in a such range that the horizon and the general outdoor view were not visible. As the years pass these phenomena are more and more frequent. Climate change and the over warming of the planet are nowadays undeniable facts. Environmental crises and natural disasters in a smaller or bigger range are constant in different places on the planet, affecting populations that have to cope with these new environmental circumstances. Subsequently, their daily lives and habits and -under extreme crises- even their survival are affected. In the past, after the occurrence of an environmental crisis or a natural disaster, migration -permanent or temporary- was an option for the survival of the affected populations. Nowadays, that the impacts of societal development on the environment are more extreme than ever, the economic, political, and social factors are increasing the possibility of the vulnerability of both the environment and the populations. Shortly, it is estimated that the number of people forced to move due to environmental crises, natural disasters, and climate change will vastly increase.

These thoughts led me to research similar extreme environmental incidents of the past that resulted in the uprooting of populations. The recent war that started in Ukraine and the encirclement of the former Chernobyl plant by military troops along with the old Cold War threats of "pressing the button" which came into the pollical surface again, reminded me of the most discussed human-made environmental disaster that led to the resettlement of populations that lived in the affected areas. It reminded me of the explosion of the nuclear reactor in Chernobyl. The negative effects of this environmental accident could not be accurately estimated in a global range. As the radiation travels by air and water, it is not seen, nor smelled thus it could affect areas far away from the area where the accident took place. It surely affected negatively the area around the power plant and the near towns of the former Soviet Union. Many towns around the power plant had to be evacuated and large numbers of people were forced by the state to leave their homes and birthplaces permanently. The spread of radiation also resulted in the deaths of many people (i.e. by acute radiation diseases or by cancer or other health problems that are not officially connected to the radiation). Until today, the Soviet Union's successor states have to cope with the consequences of this

environmental catastrophe. The negative impacts on nature, animals, and populations are immeasurable. This was my starting point.

As the importance of the modernization processes that led to the social, political, scientific, and economic human development and the subsequent environmental degradation could not be underestimated, the following thesis will elaborate on tracing their historical starting point. Modernity is often conceived in the following periodization: the science revolution (16th-17th century), the enlightenment (17th-18th century), the British industrial revolution, and the French revolution (18th century) (Chuanki He,2015:7). From the 18th century and until now, modernity could be divided in the first and the second period. The first period is linked with the shift from agricultural to industrial society, as well as with economy, and culture. Except for the notion of industrialization, the first period of modernity also includes the processes of urbanization, democratization, marketization, etc. The process of the second period of modernity (after the 1970s), is the shift from industrialization to a society-economy-civilization-culture of knowledge and a shift from the material to ecological culture, including the features of globalization, individualization, etc. The transition from the first period of modernity to the second includes mainly the de-industrialization, suburbanization, decentralization, and ecological protection processes (Chuanki He, 2015:12). It was under the processes of modernity that the human-environment relationship was firstly disturbed and this disturbance is still accelerating.

Within the frame of the above, one can notice that the Chernobyl accident (April 26, 1986) occurred at the beginning of the second period of modernization in a Soviet society that had incorporated the processes of industrialization, urbanization, and literacy. Its social and political orientation to modernity resembled that of western societies. However, the soviet system was self-defined as an alternative to western modernization and it focused on prevailing over the West in political, economic, and cultural sectors. Under the theory of historical materialism, which prevailed in the Soviet Union's scientific community, the Soviets focused on proving to the world the superiority of the construction of the soviet society, in comparison to the capitalistic one. However, socialistic modernity carried inherent contradictions in its subsistence (i.e. central planning was confounded with unlimited technological progress), and as Arnason argues "the soviet system was not anti-modern but mis-modernized" (Kivinen-Maslovskiy, 202:5-20).

The above characteristics of Soviet society and state can be further understood within the concept of biopolitics – a theory introduced by French philosopher Michel Foucault – which is referred to the need of the state to control human health and the environment. Their usage constitutes a political answer to extreme circumstances like climate change or nuclear, health, and environmental crises. Politics and law evaluate life-based on perceived constants and traits, and the term "biopolitics" is used to describe the entanglements between the management and regulation of species and local populations. Foucault's idea of biopower and the expansion of state power over the physical and political bodies of a population forms the basis of his concept of biopolitics.

Foucault focused on the one hand to the human body as a sexual, reproductive, and knowledge machine. On the other hand, he connected the human body to the social body and the issues of national policies and power. Therefore, biopower is a subtle, omnipresent, and continuous power over life. It is exercised through the power techniques of biopolitics on the management of population and of anatomopolitics[1] on the management of human bodies to integrate them into economic and social life (Petersen-Bunton, 1997:).

The negative impacts of environmental crises, as well as measures to mitigate and adapt to them, will contribute to the ongoing and future changes in human settlement and mobility. The concept of migration as an adaptation to environmental crisis poses questions since it can dictate people to relocate, contributing to displacement and mobility. And since in the processes of human relocation the state is also involved then Foucault's discussion on biopolitics is of significant importance. The political decisions of each state on the management of an environmental crisis, constitute an exercise of power that affects both the human body and the population. Therefore, it is crucial to understand the aforementioned notions of biopower and biopolitics to explain the political management of populations after an environmental crisis. This thesis will also elaborate on the exercise of state power and biopolitics, thus the management of populations in the Soviet Union, through the lens of my case study, the environmental crisis of Chernobyl.

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[1] Bio-power is divided in Bio-politics and Anatomo-politics. The latter focus on the human body and perceives it as a machine that must develop its capacities in order to participate into the political and economic control systems. Biopolitics focus on the populations instead (Papadimatou, 2017:5)

Environmental crises and climate change, force people to move. Many of them choose to migrate voluntarily (internally or externally) and leave their homes, jobs, birthplaces, and family to avoid the environmental crisis' impacts and have a chance to survive or seek a better future. Others are forcibly displaced against their own will, or by the state and its authorities' political decisions, especially when the place is so damaged that no human or another being can survive (i.e. Chornobyl). Unfortunately, many people are trapped in such situations, unable to move, due to lack of means. Others, choose to remain and work in the degraded place, snubbing their life and health risks to obtain better salaries. Some elderly people, despite the health risks, choose to return, refusing to leave the place they lived their whole lives and face integration difficulties in their new environment. However, as mentioned above, in the past, when an extreme environmental crisis occurred, large numbers of populations were forced to migrate, internally or externally. The generative factors of environmental migrations are many. Indicatively, an instant man-made crisis or long-term man-made environmental degradation could lead to the uprooting of populations. The threat of the radiation could be deemed on the one hand as a "rapid-onset" disaster since the need for evacuation is urgent and on the other hand as a "slow-onset" disaster since its effects last for a long time, rendering the return almost impossible (Karácsonyi, Taylor, and Bird:16). According to ICCP[2] increases of temperature in several places around the globe is human-induced. Global climate changes (i.e. the rise of sea level, ice melting, permafrost, extreme rainfalls, and temperatures, etc.) might also alternate the social and environmental balances, -and alone or further combined with environmental contamination- they might lead or force many people to migrate temporarily or permanently (Oliver-Smith,2009:8). Unfortunately, the international legislation system does not provide adequate legal international protection for environment-related migrants. Forecasts for the number of people who will migrate for environmental reasons vary -from 50 million to 250 million people during this century-, yet they are not considered safe, as they do not arise from specific data or past cases. However, climate change scientists indicate the possibility of migration due to environmental reasons shortly and their predictions cannot be underestimated (Oliver-Smith,2009:9). International legal binding agreements do not exist and although the status of "environmental migrants" resembles that of refugees, the people that are migrating due

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[2] Intergovernmental Panel on Climate Change

to environmental reasons are not recognized as such. Furthermore, many environmentally displaced persons migrate internally and only a small number of them decide to cross borders. One of the international legal instruments that focuses on this specific migratory category, thus on internally displaced persons was issued, in 1998, by the United Nations, under the title "Guiding principles on internal displacement". It is not binding; however, the states should comply with it and provide legislation to protect the human rights of environmentally displaced individuals.

For writing this thesis bibliographical research was conducted. Mainly based on scientific works related to the concepts of social anthropology, biopolitics, nature, environment, modernity and modernization processes, the International migratory legal tools, and finally the Soviet Union politics/biopolitics and environmental strategy that resulted in the Chernobyl case and its aftermaths. Besides all the bibliography used in this thesis, the book of Andriana Petryna, under the title *"Life exposed. Biological citizens after Chernobyl"*, the book of Paul Josephson, Nicolai Dronin, Ruben Mnatsakanian, Aleh Cherp, Dmitry Efremenko and Vladislav Larin under the title *"An environmental history of Russia"*, were very helpful in providing adequate information on the legacies of modernity, biopolitics and environmental concerns in the Soviet Union and its successor states, before and after this extreme environmental crisis.

In the first chapter, this thesis will try to examine the evolution of anthropological studies concerning the effects of the environment on civilizations, and politics, or by Foucault's term biopolitics affecting the environment, the health of human bodies, and subsequently our existence on the planet. Moreover, it will focus on understanding the circumstances that led us to these climate and environmental conditions, that led humans to believe that they could master nature to serve their own goals and finally will examine the starting historical point of land degradation, over-cultivation, overproduction, and the subsequent climate crisis, conceptualizing the notions of nature and environment in accordance to human activity and progress from an anthropological perspective.

In the second chapter, this thesis will focus on the factors of environmental crises, leading to migration, conceptualize different migratory patterns and terms, together with the international legal protection system of those people who are evacuated and resettled under these circumstances and try to analyze the concept of the environmental migration as a human right and challenge the international legal framework.

In the last chapter, this thesis will observe and present the historical and anthropological data on my case study "Chernobyl", historically under the light of the Soviet Union's practices and subsequently the management of such an extreme environmental crisis that affected the whole planet, focusing on the notions of nature, environment, modernization and biopolitics that are affecting the environment, the health of human beings, their bodies, their space, their communities, their citizenship, their social structures. It will also try to examine this ethnographic case of the past when people were forced to move massively due to environmental crises, present threats, as well as future challenges.

Finally, this thesis will try to question and answer, if massive migration could be a temporary or permanent solution for the people affected by an environmental crisis and how the nations or the international community and the international institutions could cope with the reoccurrence of such a large environmental crisis that might affect populations of the whole planet and may disturb the environment, the space, the time, the community, the culture, the human body, the biopolitics, and the future.

CHAPTER 1.

1.1 NATURE AND ENVIRONMENT IN SOCIAL ANTHROPOLOGY

The following chapter, attempts to conceptualize the terms: nature and environment in connection with the development of anthropology and trace the trends and debates of the starting point of the environmental degradation, the effects of Enlightenment, industrialization, modernization, and biopolitics, as social factors that led humanity to this situation.

The words "nature" and "natural environment" are rather abstract and general concepts. Some anticipate "nature" as a separate, distinct, and opposed to people thing (Ingold, 1993), while others state that nature is linked to the spread of patriarchal capitalism (Escobar,1999). As to Macnaghten and Urry (1998), the natural environment is a "real entity" or "something that follows its general laws and exhibit its regularities", thus "nature" exists and has its meaning without the human particularities that shape it (Carrier, 2004:6). Yet, it is crucial to conceptualize the notions of nature and environment to avoid interpretations that lead in misunderstanding those phenomena that are connected to vulnerability, such as environmental displacement, resettlement or disasters (Oliver-Smith, 2009:21). According to those social sciences that deal with the environment (i.e. ecological anthropology, environmental sociology, and social geography) the notions of "nature" and "environment" are not inseparable, on the contrary, they are distant and they indicate explicit differences. On the one hand, nature is compounded by those complex geophysical, biological, and chemical processes which shape the earth's diverse functions and subsistence. According to Murphy (2001), those processes compose the "primal nature" that includes "the trees, photosynthesis, bacteria, viruses, earthquakes, hurricanes…". Moreover, the maintenance of the earth's subsistence is based on the capability of the natural system to be renewed and self-reproduced, so that life could be maintained (Oliver-Smith, 2009:22). He also provides the notion of "pristine nature" referring to those territories that are not affected by human's interventions, however -as human reshaped nature throughout time in several ways- he points out that this notion is referring to those circumstances when the populations of human were rather small and thus it is replaced by "primal nature". On the other hand, as the environment is a social construction and not a natural creation, the term "natural environment" is rather antithetic. Since social processes are affecting nature, while natural processes – that interact with the environment- are recognized as resources or threats and at the same time these

processes of nature are used for human purposes, the natural is converted into a social product (ibid:22).

The traditional meaning of "nature" has been altered and socialized, as the impacts of human societies on the natural world were accelerating. However, "nature" and its processes can still impact human societies. Therefore, these nature-society interactions need to be interpreted by natural and social sciences (ibid:21).

Humans, tend to anticipate their surroundings according to their social settings, biographies, social relations, memories, values, circumstances, and desires, thus in a rather idiosyncratic way and only to a degree commonly and collectively. However, the ability to talk about "nature" and "natural environment" in abstract-universal terms is an advantage as universal terms include us all, they deny our individualities and particularities, and they make us all equal and subordinated to their imperatives (Carrier, 2004: 6-8).

According to a scientific model employed by "nature protectionists", nature is the interaction between living, non-living things, and substances, combined with the terms of species, ecosystem, habitat, and biodiversity (Milton. 2002:9). The hypothesis of "Gaia", which was firstly introduced in the 1970s by Lovelock[3], proposes an interconnection between all organisms as a common system that self-regulates life conditions on earth (Banerjee-Arjaliès, 2021: 8). However, this theory was not accepted by the scientific community and conceived as a new-age hippie philosophy (ibid: 8).

As to the Darwinian theory for biodiversity, the greater the variety of living species is, the greater the chances are that some of them would manage to survive in terms of changing environment, therefore it is crucial for the future of life on the planet (Milton K., 2002:9). The main goal of the "nature protectionists" is to define objectives for the restoration and preservation of species and habitats (ibid:9).

Human beings alienated themselves from nature, as a way to develop civilization, according to the way the Enlightenment saw the progress of human societies as part of Modernity. Their main goal was to manipulate and dominate it (Krebber,2011:328). According to Lynn White Jr.[4], the theory of anthropocentrism is connected to the origin of the environmental crisis. The aforementioned theory was

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[3] James Lovelock (1919) was a scientist and the inventor of the Gaia Hypothesis in 1970s (as of Hal open science p.1)
[4] Lynn White Jr (1907-1987) was an American historian of technology and cultural change. He suggested that the ecological crisis was an outcome oF Christian ethos which promoted the domination of nature (https://doi.org/10.1515/9783110215588.2711).

deeply rooted in the Judeo-Christian tradition, as he argued, and according to him, this tradition placed human beings as guardians of Earth, superior to non-human beings, which are existing only in favor of humanity. Thus, under the theory of anthropocentrism humans are superior to nonhumans, as the former are higher positioned on the Chain of Being (Eccy de Jonge,2021:171-172). This religious standpoint was replaced by the worldview of reason over nature; thus, superstition was replaced by scientific rationalism, at the beginning of the enlightenment philosophy (ibid:171). During the Enlightenment, human-nature alienation increased (Krebber,2011:329). Since then, human's main goal was oriented not only in a way to dominate nature in compliance with it but to adjust it to achieve humanity's goals and needs (ibid:329). The Enlightenment idea altered human's cultural relationship with nature, which was shifted from mimetic practice to scientific use and modification of its materials, seeking to influence, rebuild, reproduce and recreate them to serve human needs ibid:329). At that time, the concept was human versus nature, with the latter being imagined as a mechanism providing natural objects, understood as materials at absolute human disposal, useful for human production. Humans' goal was to gain knowledge of the ways nature functions, enlarge their power over it, and improve their living standards (ibid:330). It was science that organized modern culture and the relationships between Western societies and nature, and since the 17th century, nature's modification and manipulation vastly increased (ibid:331).

During the period of colonialization, western knowledge, which was perceived as "systematic", "open", "objective" and "intelligent" prevailed the knowledge of indigenous people, that was conceived as "simple" and "primitive" (Banerjee-Arjaliès, 2021:10). It was the asymmetric power and knowledge relations that colonialism was consisted of, that maintained Western science as superior (ibid:10). The western Science was mainly focused on producing wealth, while the knowledge of indigenous people reflected a kinship-based, more intimate relation to nature, under which human and non-human beings were interrelated and co-constitute the world, while the earth was perceived as a living organism (ibid:14). However, colonialism did not recognize this knowledge, on the contrary it promoted that colonial mission's main purpose was to civilize indigenous people, dominate, assimilate or eliminate them and seize their land (ibid:7). Therefore, colonialism that constitutes an Enlightenment's product, aimed to manage the developmental path that led to modernity and progress (ibid:7). It is the same path of development that marks the Anthropocene as a new geological stage,

starting from European technological developments, that were spread to the rest of the world, combined with increased human actions to advance humanity and change earth system (ibid:7).

1.2 THINKING ABOUT NATURE IN ANTHROPOLOGY

At the beginning of the 18th century, it was Johann Gottfried Herder[5], - considered to be the precursor of environmental anthropology - who argued that it was "Nature" to force groups of human beings to develop, according to the geomorphology (rivers, mountains, and so on) and within the limits of their territory (Beals, 2017:45-46). Alexander Von Humbold set the basis for an empirical scientific study of nature as an entity. During the 19th century, interpretations of the environment were focused on its human use, rather than on human interactions with it. The anthropologists of the 19th century grasped the idea of basic ecology; however, it was after WWII when the development of system understandings and complex human-environment interactions took place (ibid: 49-50). During the 1950s under the leadership of Franz Boas, the concept of race disappeared in anthropology.

One basic contribution to the understanding of the human-nature relationship that further influenced the thinking of future anthropologists and other scholars was the "domination thesis," a central and consistent thesis of critical theory of the School of Frankfurt, which states that humanity's attempt to dominate external, nonhuman nature is intimately and necessarily linked to the domination of other humans and internal human nature – a clear reference to the notion of biopolitics. Humanity's intellectual and material progress, development of rationality, and creation of liberal individualism cause societal and individual regression, the spread of unreason (myth), and individual subjugation (Gunderson, 2014: 15).

According to Adorno and Horkheimer[6] and their *Dialectic of Enlightenment*, the main reason for the domination of nature has always been to 'liberate humans from

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[5] Johann Gottfried von Herder (1744-1803) was a German philosopher that contributed to the introduction of cultural anthropology and linguistics, two academic disciplines that did not exist until then (https://plato.stanford.edu/entries/herder/#RoleBirtLingAnth).

[6] Theodor W. Adorno (1903-1969) and Max Horkheimer (1895-1973) were German was a post-WWII German philosophers, sociologists, social critics and members of the School of Frankfurt. Adorno and Horckheimer where the co-authors of the "Dialectic of Enlightenment". According to them environmental crisis is an outcome of a triple domination: The domination of nature by humans, the domination of nature within humans, and the domination of some humans by other humans (https://plato.stanford.edu/entries/adorno/ and https://plato.stanford.edu/entries/horkheimer/)

fear and position them as masters*,* since they perceived nature as hostile to them (Krebber,2011:334). The aforementioned thesis presents the history of humanity as a constant anthropocentric struggle to dominate nature so that humans could be secure and preserved (ibid:322). Moreover, as they have also argued, it was the same concept of 'human mastery of nature that led to fascism and totalitarianism (ibid:322), since the human need to control external nature leads to the subjection of human's inner nature, which subsequently leads to the mastery of humans over humans (ibid:324). As humans are perceived as separated from their natural characteristics and thus differentiated from nature, define themselves as subjects of power, and at the same time, they are reducing nature to a simple object (ibid:335). However, the result in the human versus nature concept indicates a constant reaction between both parts in the following way: as humans are constantly trying to change nature, the latter reacts, then humans have to react again, and so on (ibid:335). Therefore, humans did not manage to command nature and expel it from the society concept, since the former's reactions threaten the latter's existence (ibid:322). Nowadays, the previous human dominion in the environment is obvious, therefore is essential for science to predict the human-environment relationships in the year 2100, as a way to manage them (Beals, 2017:52).

Critical theory's commitment to improve society's relationship with nature influenced anthropological thinking. In practice, reconciliation meant creating a more harmonious relationship between humanity and nature; in thought, it meant "transforming our relation to and knowledge of nature so that nature is once again considered purposeful, meaningful, or valuable" (Whitebook 1979:55).

Michel Foucault was one of the thinkers that were influenced by the critical theory of the Frankfurt School. As he mentioned:

> I think that the Frankfurt School set problems that are still being worked on. Among others, the effects of power are connected to rationality that has been historically and geographically defined in the West, starting from the sixteenth century. The West could never have attained the economic and cultural effects that are unique to it without the exercise of that specific form of rationality (Foucault, 1991: 115).

The very rationality that instrumentalized nature for the benefit of man and which was criticized by the Frankfurt School, is the same rationality that instrumentalized the context of biopolitics to control people.

In Foucault's theory, power is a concept of compound strategical situations within a society, or as a technique of acting upon the actions of others. Furthermore, biopower is a subtle, omnipresent, and continuous power over life, exercised through the power techniques of management of population and the anatomo-politics of individual bodies. The management of the environment and landscape in general constituted a central concept of bio-power. Bio- and anatomo-politics were used as power techniques in different spheres of state institutions.

To conclude, according to Foucault's words:

for millennia, the man remained what he was for Aristotle: a living animal with the additional capacity for a political existence; modern man is an animal whose politics places his existence as a living being in question (Ibid:143).

Of all Foucault's writings only "*Society Must Be Defended"* examines the Soviet case most extensively. However, even if he refers to soviet politics -in his work for biopolitics- only peripherally, it is clear that he was influenced by the cases related to them (Prozorov, 2016:40). During the 70s, he discussed the Soviet case in numerous articles, lectures, and interviews, and it is concluded that he did not analyze the case of Soviet Union specifically, not because he was West-centric, but because he thought that Soviet Union's biopolitics or governmentality was not specific or unique. He argued that Soviet socialism consisted of puzzled governmental technologies of the late 18th and 19th centuries and even if it abnegated Western Capitalism on the macro level of state ideology, at the same time it imitated its biopolitical and disciplinary practices on the micro-level (ibid:41-42). In 1971, Foucault argued that the Soviet Union followed the paradigm of a capitalist system in its entity. As he characteristically stated,

Most of the bourgeois values are accepted and maintained by the Communist Party (in art, the family, sexuality, and daily life in general). (Foucault in Simon 1971: 196 in Prozorov, 2016:41-42).

He also argued that except for the autochthonous practice of "*party discipline",* the Soviet governmental practices and techniques were copied directly from its ideological antagonist. According to him, the only elements that the Soviet Political System modified were the production and ownership control, and all the rest of Soviet administrational practices derived directly from the 19th-century European capitalist system which influenced disciplinary processes, morality, and even aesthetics, which were titled as "party disciplines" (Prozorov, 2016:41-42).

In the mid-20th century, social anthropology took the above critique and started to study the environment. Environmental anthropology studies current and historical interactions, between humans and the environment, driven largely by environmental concern, to communicate the origins of recent environmental degradation (Kopnina & Shoreman-Ouimet, 2011: 2). It is considered by some to be the applied dimension of ecological anthropology, which lies into the sub-field of cultural anthropology and which encloses the topics of primate, cultural, spiritual, behavioral, historical and evolutionary ecology, ethnoecology, paleoecology, etc (ibid: 3). It has at its core the human relationship with ecology, environment, and environmentalism, just as feminist anthropology concerns with the study of women, and Marxist anthropology with the study of classes (ibid: 2-5). Environmental anthropology is the mutual understanding of humans according to their environment, while at the same time is the understanding of the environment according to the population's social, political, and economic life (ibid: 6). It also constitutes a linkage between local populations, national and international organizations to the natural environment in which they operate (ibid: 6).

Environmental anthropology, as an anthropological sub-field points out both the similarities and differences amongst human cultures. According to Kay Milton[7] (1993, 1996, 2002), there are three main ways in which anthropological understanding might contribute to the environmental cause: 1) By studying human-environment relations, or anthropology as human ecology. 2) By interpreting 'trans-cultural' environmental knowledge and practice. 3) By studying environmentalism as a cultural practice and as an object of analysis (ibid: 5).

New environmental anthropology attempts to trigger ecological awareness, sustainability, and actions, not only through understanding but also through formulating culturally informed and appropriate solutions to problems and issues such as environmental degradation, environmental racism, the role of the media and NGOs, and various kinds of threats, with a compilation of analysis in national, international, local and regional level, as they vary and link in time and place, offering international dimensions in understanding issues like ecosystems management and environmental justice. This means that new ecological anthropology focuses on a larger scale than the local ecosystem (Kottak C. 1999: 25).

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[7] Kay Milton (1951) is a professor of Social Anthropology. Her main research fields include environmental and ecological anthropology.

According to Ulrich Beck and his book on the risk of society, the characteristic of the 19th century was the separation of society and nature and their anticipation as two entities (Buttel,2000:3). It was not until the Chernobyl crisis, that the world realized the fact that the idea of borders is not adequate when we have to deal with environmental risks in globalized modernity (ibid: 3). Therefore, the idea of risk society, captures the society and the risks (of the environment) as inseparable, thus society and nature are interconnected and the environment is affected by every aspect of the everyday life of the society (ibid: 3). The modernization process and its practices led to several risks and hazards that are threatening the life quality of the current and future generations. The recognition of those risks and hazards along with the decline of parliamentarism and class etc are the major precipitants of "reflexive modernization" which according to Beck, means more radicalized modernity against the old classical industrial setting (ibid: 29). Within the theory of reflexive modernization, lies the ecological modernization theory, and its proponents consent firstly that the choices of humans and institutions do not simply reflect the forces of capitalism and industrialization, and secondly that the de-modernization of societies is not the solution to environmental problems proposing progressive modernization instead (ibid: 29). During the '70s and the '80s the environmental discourse, examined the industrial or capitalistic character of modern societies as the causative factor of environmental problems, the (neo) Marxist theories who supported that the capitalistic system was responsible and the industrial society theories that were pointing to the industrial character (production and consumption) of modern societies. The institutional clusters that characterize modernity are industrialism, capitalism, surveillance, and military power (ibid: 48).

In the last decade, a new term emerged. "*Anthropocene*", a geological period that signals the entering of a new epoch for the planet, a term that derived from natural sciences and entered rapidly into social sciences (e.g. sociology, anthropology, political and legal sciences, and so on) (Banerjee-Arjaliès, 2021: 4)[8].

The anthropologic scientific community has often opened a discussion on the connection between climate change and local environments. In these discussions, the notion of Anthropocene is understood as a factor that affects social life and relations

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[8] There are disagreements among scientists about the beginning of Anthropocene. Some mark the entry of the early Anthropocene at a period when cultivating and farming broadens, about 8,000 years ago. Others place it in 1800 when industrialization reaches its peak, another opinion trace it later in the 18th century (Banerjee-Arjaliès, 2021: 4).

instead of a geophysical phenomenon. According to Suzan Crate[9] and Mark Nuttall[10], it is the culture of massive consumerism that led to climate change (Chua & Fair, 2019). Richard Wilk[11], argues that the "consumer economy" is the generative factor of the transformation of materials and energy that keeps the economic engines operating constantly to serve the luxurious lifestyles promoted in developed rich countries. He also provides as a fact that rich countries with smaller populations exceed the national levels of per capita consumption of poorer countries with bigger population numbers (e.g. USA versus China). These different rates may constitute an issue of injustice in development (as developing countries should remain poor and pay the price for the past overconsumption and wealth of the Europeans and Northern Americans) and the political dimensions of consumption should not be underestimated. We should also consider that consumption decisions are taken by governments and companies rather than the consumers themselves[12]. The discipline of Anthropology should address the issues of consumption taking into account the differences in the morals, justice, needs, and future standards of different cultures (Wilk, 2009:266-267).

Moreover, it is climate change that is disrupting the relations between the indigenous people and their environment, and for its mitigation, further cultural changes are required. Consequently, culture is interrelated both to the generative factor of climate change and to the influential factor of the responses to it. It is in this field that the intervention of anthropologists is crucial. However, they should not take for granted the notion of "Anthropocene", but rather focus on explaining and investigating it as a problem of "space" (Chua & Fair, 2019).

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[9] Suzan Crate is an environmental anthropologist and an anthropology professor at George Mason University (Department of environmental science). She has worked since 1988 with Siberian's indigenous communities. She was also a member of the American Anthropology Association Task Force on Climate Change (https://science.gmu.edu/directory/susan-crate)

[10] Mark Nuttall is a social anthropologist and an anthropology professor and Henry Marshall Tory Chair in the Department of Anthropology at the University of Alberta in Edmonton, Canada. His field research has been carried out in the Alaska, Greenland, Finland etc. He is interested in issues such as weather, environmental and climate change, place locality, migration and depopulation, geopolitics and so on (http://marknuttall.com/about/)

[11] Richard Wilk is a social anthropologist and a Distinguished Professor Emeritus Affiliate, Center for Archaeology in the Public Interest. His research field was on climate change issues related to anthropology, yet his recent research interests are focused on the history of food globalization (https://anthropology.indiana.edu/about/emeriti/wilk-richard.html).

[12] Wilk provides the example of General Motors that withdrew all electric cars and destroyed them despite the consumer's demand (Wilk, 2009:266-267)

Enlightenment failed to convert the primary presupposition of separation and superiority of human beings in the non-human world. (Eccy de Jonge,2021:171-172). Even if humanity gained knowledge and power in manipulating nature it did not manage to create better living conditions. On the contrary, these practices led to changes that deteriorate living standards and threaten our existence (Krebber,2011:331). Therefore, the goals of Enlightenment were both achieved and missed. The scientific knowledge and power in manipulating nature did not bring the expected benefits, on the contrary, it seems that as humanity gains more knowledge, the ecological situation worsens (ibid: 332). Society's answer to the environmental crisis falls in the following deadlock: the industrialized and capitalistic world uses the Enlightenment's legacies to cope with the problem, overlooking that Enlightenment's legacies on nature domination have already failed (ibid: 322).

Nature is not inexhaustible; the scarcity of natural resources and the worseness of living conditions are only some of the factors of the ecological crisis that affects societies on a global scale (ibid: 332). During the past forty years, there have been warnings in society about the environmental threats, however, the improvement in dealing with them is rather small, as they seem to increase and keep on threatening the living environment (ibid: 332). According to the Frankfurt School and dialectical thinking in general, to answer to the environmental crisis, we should stop placing humans over nature. The concept of *reconciliation* with nature -meaning the overcoming of anthropocentrism- should be predominant (ibid: 325). Thus, as Adorno argued, to cope with environmental crises, the key is mediation between humans and nature instead of domination (ibid: 336).

CHAPTER II.

2.1 ENVIRONMENTAL HUMAN MOBILITY AND THE INTERNATIONAL LEGAL FRAME OF ENVIRONMENTAL REFUGEES.

It is human nature to migrate. Nowadays, as environmental degradation and its implications are maximizing, the phenomenon of environmental migration takes new and larger dimensions, especially if we consider the frequency of the usage of the terms "environmental" or "climate" migrant or refugee (Ionesco-Mokhnacheva-Gemenne, 2017).

On the 26th of April 1986, the environmental crisis that occurred after the Chernobyl nuclear accident resulted in the relocation of people. This relocation was induced by the state. Firstly, the authorities announced that the territory of 10 kilometers around the plant, should be evacuated. After a week, the government announced that the evacuation territory should be increased to a radius of 30 kilometers around the accident (Meybatyan, 2014:63). The evacuation of Pripyat started the next day, and several around fifty thousand residents were evacuated (ibid: 63). It is estimated that more than 5,000,000 people lived in the contaminated areas of Russia, Ukraine, and Belarus. Several 400,000 people lived in strict radiation control areas, which were classified as such following their radiation levels. By the end of 1986, it is estimated that 116,000 people and 60,000 farm animals were evacuated from the "exclusion zone". During the years that followed, more than 220,000 people were also relocated (ibid:64) (The Chernobyl Forum, 2003-2005:10). The facts and data of the aforementioned man-made environmental disaster, that created hundreds of thousands of environmentally displaced persons, are going to be investigated thoroughly in the following chapter of this thesis.

Specifically, more than 300,000 people were displaced and several 6,000,000 people were affected. Most of them were evacuated and relocated within the territories of the former Soviet Union. Many of them were relocated more than once. Some persons returned and still live in the contaminated areas. Others preferred to work there, ignoring the radiation and contamination levels.

Every year, millions of people move around the world, to avoid environmental stress. In the future, it is expected that the percentages of the environmental population's movements will vastly increase. Some scholars argue that migration is a social and environmental phenomenon that affects and is affected by the environment. (IOMWMR, 2020:253). Within this frame, the phenomenon of environmental

migration takes new and larger dimensions, especially if we consider the frequency of the usage of the terms "environmental" or "climate" migrant or refugee (Ionesco-Mokhnacheva-Gemenne, 2017).

According to the latest (2022) Intergovernmental Panel on Climate Change (IPCC) report, which is a UN body, that focuses on the impacts, adaptation, and vulnerability of climate change, the direct drivers of displacement and involuntary migration are mainly extreme climate events (eg tropical storms, heavy rains, floods and so on), while the indirect drivers (eg income losses and so on) are mainly those circumstances that worsen the daily lives of the citizens. According to the latest (2022) Intergovernmental Panel on Climate Change (IPCC) report, most people migrating for climate reasons, do not cross national borders. Since 2008, extreme events such as floods, storms, and so on, led to an average annual internal displacement of more than 20 million people (ICCP, 2020:TS19).

Numerous terms have been used to describe people who move as a result of environmental and climate crises (IOM, 2020: 254). El-Hinnawi, in 1985, was the first to identify "environmental refugees", as a new form of migrants. He conceptualized three categories of environmental migrants: temporarily displaced persons who could return to their destination of origin when the environmental crisis passes or when its consequences are fixed; persons who are permanently displaced that have resettled in another place.

Astri Suhrke[13], distinguished environmental migrants from environmental refugees. According to her, migrants are making a free voluntary choice to go away from their country of origin, while refugees are forced to abandon it by a sudden irreversible environmental crisis (Keane, 2015: 214-215), (Suhrke, 1993: 9-11). The international community has been impelled to try to understand better the causation of environmental migration (Keane, 2015: 210). Legal objections in the case of recognizing the environmental refugees as such are expressed in two ways. The first focuses on the depoliticization of the reasons for migration. The second, points out that if migration is connected to the change in the environment, then the political influencers could grab

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[13] Astri Suhrke is a political scientist, professor of international relation, journalist and senior researcher, focusing on humanitarian UN policies and strategies on human security and post-war peace restoration (https://www.cmi.no/staff/astri-suhrke), (https://watson.brown.edu/costsofwar/people/contributors/astri-suhrke).

the opportunity and drive away the blame from the governments (Oliver-Smith, 2009: 11).

International Organization for Migration prefers not to use the definition "environmental refugee". Instead, they prefer to use the term "environmental migrant". According to IOM's 2008 World Migration report:

Environmental migrants are persons or groups of persons who, predominantly, for reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their homes or choose to do so, either temporarily or permanently, and who move either within their country or abroad (IOM World Migration Report, 2008).

Today, there is not a single legal framework that explicitly addresses the rights and needs of environmental migrants. (IOM, 2012: 29). The IOM distinguishes environmental migrants into three basic types: 1. environmental emergency migrants, 2. environmentally motivated migrants, and 3. environmentally forced migrants (Terminski, Bogumil, 2012: 16)**.** In its 2008 report:

Environmental migration is understood as a multi-causal phenomenon, yet one in which environmental drivers play a significant and increasingly determinative role. These environmental drivers can have the form of natural disasters or environmental degradation and may or may not be related to climate change" (IOM,2012: 64).

The international law system does not recognize displaced persons as a special juridical category. Hence, the legal recognition of a person as environmentally displaced or not does not offer any specific benefit for the "beneficiaries", thus it is only a term and not a status, according to which the States would have legal obligations (David Keane, 2015:217).

According to the Council of Europe, as the cause and the duration of displacement differentiates between IDPs due to man-made disasters, those of natural disasters, or those due to conflicts, the policies and law adoptions should not differentiate them (ibid, 2016:48). As they argue, the needs of IDPs from natural or man-made disasters are of the same importance, as those created from armed conflict (ibid, 2016:19).

In 1998, thus many years after the Chernobyl's disaster, the UN Secretary-General on IDPs presented to the UN Commission on human rights, the *"Guiding Principles"* on internal displacement, in order to address the needs of people having to face same or similar cases of internal displacement in the future. Those 30 Guiding

principles even if they do not constitute a legally binding instrument, pertain to the international instruments on the human rights of the migrants and refugees as well to the humanitarian law and have been recognized by the UN General Assembly as an important legal tool for the protection of IDPs, since 1998. States and other actors were encouraged to use them in cases of internal displacement and some of them already adopted them in their national legislation (IDMC). Specifically, these "Guiding Principles" pertain indicatively to the following international instruments: the Universal Declaration of human rights, International Covenant on Civil and Political Rights (ICCP), International Covenant on Economic Social and Cultural Rights (ICESC), Convention on the Elimination of all forms of Discrimination Against Women (CEDAW), International Convention on the Elimination of all forms of Racial Discrimination (ICERD), Convention on the Rights of the Child (CRC) and other international treaties, protocols, and statutes (OHCHR).

According to the guiding principles on Internal displacement

The international community is confronted with the monumental task of ensuring protection for persons forcibly uprooted from their homes by violent conflicts, gross violations of human rights and other traumatic events, but who remain within the borders of their own countries. Nearly always they suffer from severe deprivation, hardship, and discrimination. (UN, 2004)

The aforementioned principles recognize the rights of the IDPs and their protection in every phase of their displacement. The first principle provides that

Internally displaced persons shall enjoy, in full equality, the same rights and freedoms under international and domestic law as do other persons in their country. They shall not be discriminated against in the enjoyment of any rights and freedoms on the ground that they are internally displaced (ibid: 2)

while the third principle provides that the national authorities are responsible for providing adequate humanitarian legislation and assistance to the IDPs within their territory and subsequently provide to the displaced persons the right to request and receive protection from the state authorities without being persecuted or punished for such requests. Special provisions and protection are provided for children and expectant mothers, persons with disabilities, and the elderly in the second paragraph of the fourth principle. Furthermore, the seventh principle provides in its first paragraph the following:

Before any decision requiring the displacement of persons, the authorities concerned shall ensure that all feasible alternatives are explored to avoid displacement altogether. Where no alternatives exist, all measures shall be taken to minimize displacement and its adverse effects" and in its second paragraph is provided that "The authorities undertaking such displacement shall ensure, to the greatest practicable extent, that proper accommodation is provided to the displaced persons, that such displacements are affected in satisfactory conditions of safety, nutrition, health and hygiene, and that members of the same family are not separated. (ibid).

As it is stated above, those Guiding principles do not have a binding legal effect and it is up to the States to adopt them in their legislation. Furthermore, it has to be mentioned that several other international instruments (such as frameworks, annotations, protocols, guidelines, and so on so forth) have been issued over the years by different international actors, to frame, conceptualize and address the implications of Internal displacement. Nevertheless, they are also not binding (OHCHR).

Migration specialists and environmental scientists argue about the causes of displacement. The former provide that the concept of migration is rooted in social, political, and economic factors, while the latter argue that environmental factors can induce displacement. However, the analysis of environmental displacement has to be based on the understanding of the interactions between society and nature (Oliver-Smith, 2009:12).

The case of Chernobyl environmental crisis and its subsequent results on internal displacement within the territories of the former Soviet Union, took place before the adaptation of the Guiding Principles by the UN assembly, as it is above stated. The Soviet Union and its successor states dealt with the consequences of displacement for a long time, even before the recent prewar period. In the following chapters, there will be an analysis of the measures that the Soviet Union and its successor states took in the context of IDPs rights, along with an analysis of the interactions between soviet society and the environment.

CHAPTER III.

3.1 ENVIRONMENTAL CRISES FROM THE RUSSIAN EMPIRE TO THE SOVIET UNION

The Russian empire occupied a vast territory that it expanded from Europe to the Pacific Ocean and from the arctic ocean to the Asian Continent. The variety of climate, natural resources, and vegetation, within the Russian empire, was remarkable and it would be the wealthiest nation in the world if it could manage its resources (great forests and rivers and great reserves in oil, gas, gold, iron, coal, platinum, magnesium, etc) rationally (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013: 1). Despite of its long tradition in ecological thought among its scholars, both the tsarist and soviet governments managed resources in a disorganized way. These practices contributed to an extensive pollution. Moreover, they did not take sufficient measures to prevent its further expansion (ibid: 1).

Since the 13th-century tsars strengthened their rights on land property and its inheritance. This inherited land remained in their patrimony, the nobility took great areas of what was left, and the areas around the monasteries were owned by the church, thus the peasants were left with almost nothing (ibid: 33-34). The tsars, nobility, and church controlled almost one-third of the land, leaving 75 percent of the population with what was left. The peasantry was allowed to cultivate small parts of the land, usually unsuitable for agriculture. The nobility kept the better parts for themselves, having peasants as tenants for their land (ibid:47-48). Since the tsars were fearing of the possibility of the formation of a migrating landless peasantry class, they tried to bond them to a specific place to obtain a certain "locality", by providing to them -in exchange for their freedom- an area of arable land, which they weren't able to refuse and by this way they were led to be connected to the village *"commune"* or in the Russian language to the *"mir"* [14] (ibid:47-48 & Gatrell, 2006:28-29). The state established this connection by rendering the commune of the village responsible for receiving the taxes for the land use; their members could leave the commune only upon the permission of its elderly members; it was upon the agreement of the commune whether one of its members could obtain a passport or not and so on so forth (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:47-48 & Gatrell, 2006:29).

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[14] Commune or Mir were agrarian collective and self-governed communities, that controlled and redistributed land to the community households (https://www.britannica.com/topic/mir-Russian-community)

One of the markers of economic change during the pre-WWI years was the fast construction of the railway system. It also added a significant change to the modernization process together with the foundation of new capital cities (e.g. Saint Petersburg and so on) under the governance of Peter the Great (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:35-38). Specifically, it was at the beginning of the 18th century and during the period of governance of the tsar Peter the Great (1682-1725), that the first signs of modernization of the Russian Empire appeared (ibid:29-30). He was the first to put pressure on the westernization of the Empire and impose enlightenment ideas on landscape and nature (ibid:27-28). He traveled in Europe and brought ideas, customs, and sciences to the Russian Empire. He was the founder of the Imperial Academy of Sciences and a series of schools to fight religious influences and modernize the empire (ibid:35-36). He issued forest protection decrees that concerned lands beyond his tsarist territory and argued about the promotion of sustained forestry. After his leadership, few tsars were concerned with environmental and nature preservation issues (ibid:34-35).

The aforementioned space transformation led also to a mental transformation and cultural revolution (Gatrell, 2006:28-29). Furthermore, the urbanization processes and the transport revolution led many people to migrate to the Russian empire, however, at the beginning of these processes many of them did not resettle permanently. If they managed to find jobs, they were staying in the urban centers for several months, but then they usually were returning to their villages to retire, get married, or cultivate the land (ibid: 29). The urbanization process as a consequence of the creation of big cities, subsequently led to a new urban-ecology, which demanded the permanent migration of people. These processes required minimum standards for the new urban citizens, such as clean water and food supplies, large amounts of wood for fuel, light, baking bread [15], and so on, and the construction of mining, metallurgy, and other industries (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:35-38). Under these circumstances, the transformation of large-scale industry contributed to the modernization processes. The steel, fuel, and iron sectors as well as the electrical and chemical industry were modernized. The aforementioned modernization processes partly contributed to foreign investments (Belgium, Germany, Great Britain, France,

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[15] Indicatively, the amount of wood needed per person increased to 4-5 cubic meters per person per year accelerating the deforestation processes (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:35-38)

etc). Small and large-scale enterprises co-existed and low budget labor force encouraged factory managers (Gatrell, 2006:31-32). However, with the rise of industrialization in the 19th century, big cities were confronted with health crises and poverty, mainly related to dangerous industrial activity and unclean water supply. By the end of WWI and the civil war, those cities were emptied with their citizens migrating elsewhere to survive famine (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:35-38). Nicholas II (1894-1917), the last of Romanovs was preoccupied with applying constitutional monarchy, and dealing with a war against Japan and WWI, while the scientific community of his empire failed to convince his government to adopt modern scientific techniques to preserve the environment (ibid: 1-2). Under his leadership, a ministry of Agriculture and State Domains was established, however, there was a lack of concern on environmental and land usage issues (ibid:48-49).

Increases in industrial, transport, agricultural, and other man-made loadings on Russia's natural environment threatened natural landscapes at various levels due to urbanization, industrialization, and economic development. As one might expect, this is related to the standard view of nature at the time. At the turn of the century in Russia, many anthropologists with a theoretical bent leaned toward evolutionism. The notions of human dominance over nature -which was later criticized by the School of Frankfurt- and biopolitics are intrinsically linked with the aforementioned control of nature by Russian leaders and the permanent migration of people (Alymov, Sokolovskiy, 2018).

The Bolshevik revolutionary ideas, as seen through the lens of modernity, thus as a mission for the world's passage to the new present and future, or as a passage from the former oppression of Western conservatism and capitalism to socialism, could be deemed as very modern ideas that contributed to the construction of the new Soviet identity and the Bolshevik politics. This modern Soviet identity that undertook the "*messianic*" mission of changing the Future, on the one hand, promoted revolutionary politics in the Soviet Union and abroad and on the other hand, it was expressed as an autarchic revolution from above -especially during the Stalin's era- that isolated the eastern socialistic political model from the West (Kangaspuro, 2006:41). Furthermore, as modernization can take a universal form of changing the other or *"otherizing"* and thus civilizing the "other" orient, eastern, western, uncivilized human bodies, it can also constitute a form of politics in the construction of the identity of a state and its people (ibid:42). The *"Communist Manifesto"* (1848) of Marx and Engels, along with the

Lenin's *"What's to be done"* (1902) provide that the proletariat of the world, if educated and civilized, embodies the future in the present (ibid:42).

The Soviet Union's early policy of "korenizacija" sought to include people of non-Russian ethnicities in the administration of the Soviet republics to which they belonged. The program of korenization (nativization) was implemented in the 1920s, and it led to more members of the titular country and its minorities being appointed to positions of authority in the lowest echelons of Soviet republican local government, bureaucracy, and the nomenklatura. After the mid-1930s, nationality expulsion was essentially abandoned. (ibid: 46-47).

During the revolution processes, impatient, radical young communists wanted to transform both society and nature (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013: 70-72). When the Bolsheviks took power, they nationalized immediately industry, forests, waters, and minerals and gave land to the peasants. However, this practice in its first steps encouraged the seizure of private property even in the cities (they cut trees in the country and cities destroying parks and botanical gardens) because of the economic collapse of the country (ibid: 70).

The revolution was followed by civil war and famine. The new Soviet state was trying to control society, economy, and labor by instituting the War Communism. The economy and production recovered only after the mid-1920s when the New Economic Policy was introduced, which permitted the operation of small-scale enterprises (ibid: 70-72). Despite these circumstances, there were efforts in environmental sectors, including the study of managing natural resources and the expansion of nature preserves along with new environmental ideas, such as the concept of "noosphere" introduced by Vladimir Vernadsky[16](ibid: 70-72).

During the 1920s, tensions grew regarding the prevalence of autonomy or accountability and while on the one hand, the Soviet scientists wanted to conduct basic research, on the other hand, the bureaucrats wanted to emphasize applied sciences. Furthermore, the number of scientists, institutes, professional organizations,

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[16] Vladimir Ivanovich Vernadsky (1863-1945) was a Russian-Ukrainian scientist who is considered to be one of the founders of biogeochemistry and geochemistry (https://www.britannica.com/biography/Vladimir-Ivanovich-Vernadsky). He introduced the notion of the "noosphere" as the sphere of thought that surrounds the earth and integrates all planetary and human activities in a level of planetary functioning (https://humanenergy.io/projects/what-is-the-noosphere/). According to Vernadsky humans are a large geophysical force, who must understand the past on order to preserve the future (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:13)

publications, and foreign contacts grew. Biologists supported the expansion of the network of *"zapovedniks"* [17] while leading scholars developed their studies in population biology, genetics, and the biosphere that serves the science until today as the foundations of modern ecology (ibid: 70-72).

The Bolshevik government acknowledged and accepted the contribution of Soviet scientists in the development of water resources, construction of hydroelectric power stations, and protection of the land which led -after the pressure of ecologists, writers, and other specialists-, to the establishment of the so-called *"zapovedniks"* which constituted a strictly state-protected area, *"untouched by human hands"*. However, the Soviet Union, under Stalin's command (1929-1953) adopted excessive economic and military policies and used extensively its resources. Moreover, they used practices that put *"zapovednik"* at great risk and subsequently led to pollution and degradation (ibid: 1-2).

Except for the transformation of society, which sought to get rid of the former hierarchies between the "self" and the "other", another task of the Soviet revolution was also to protect the nation against external and internal threats or enemies. It was at that point that the notion of the *"class enemy"* was inserted into the Soviet Union's vocabulary. Under this term, all those individuals who were obstacles to the state's transformation and progress were included. They were deemed to resist the "otherness" that they should become, holding on to their former personal lives. Under the notion of *"class struggle"* the "self" that was resisting being transformed into the new "Soviet Person", was conceived as a "parasite" (Prozorov, 2014:16).

Stalin's period of the Great Break (1928–32) is connected with social transformation in three interrelated projects: agricultural collectivization, industrialization, and Cultural Revolution. Many of the members of the Central Committee were executed as they turned out to be "enemies of the people". The basic structures of the Soviet society were defined by the political system and by the formation of trust and distrust balances between the state and its citizens (Prozorov, 2016: 78). It was within this frame that Gulags were formulated. Gulags were campsites that were selected with complete isolation in mind. The vast majority of Gulag camps

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[17] *Zapovedniks* were strictly protected territories of nature in Soviet Union in which human intervention or even visit is prohibited. Scientific research is allowed only in terms of not disturbing the environment (https://www.pichimahuida.info/zapovedniki.html)

were located in solitary confinement. These were large, sparsely populated areas that lacked access to roads or food, but were abundant in minerals and other resources

During the first five-year plans, Soviets implemented forced industrialization, increased coal and iron production, established major new industrial complexes (eg Magnitogorsk and Kuznetsk), and new machinery, automobile, and tractor factories. This rapid development especially in the heavy industry led to a decrease in living and working standards. During the early 1930s, the workers' incomes fell dramatically and their working conditions became poorer and more unsafe, while they were also subjected to more strict production norms and disciplinary measures. According to the 1932 amendments of the Labour Code, a worker could be fired for one day's absence, and 1940 legislation introduced criminal penalties for quitting a job or being late for work. This practice escalated and even minor violations of discipline in work could lead to the accusation of workers for disloyalty and political opposition and subsequently to their punishment, execution, or their transfer to long camp terms[18]. (Prozorov, 2016:80-81).

Through the process of collectivization, the greatest 'break' was achieved. Until 1928 less than 1 percent of farmland was collectivized in any way. However, during those five-year plans, collectivization was achieved to change the way of life for 80 percent of the population. Millions of peasants transformed from private farmers to forced employed in socialized/nationalized farms, while they were also exposed to persecution, arrest, camp detention, resettlement, and separation of families (ibid: 83).

Stalinism illustrates the biopolitical premise regarding the amenability of the biological presence of population change in government actions as a project of positive transformation of all social life along the lines of Marxist-Leninist ideology. The famous slogans about building the "New Soviet Man" and the "Soviet People" as a "new historical community of human beings show the optimistic, literally constructive nature of the Soviet Union's biopolitical mission (Prozorov, 2013: 209).

The main target plans, under Stalin, included rapid industrialization, collectivization, and natural transformation. Those projects were accompanied by the massive construction of thousands of factories, power stations, boilers, and foundries.

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[18] The role of camp system was dual, punishment and productivity in the industrialization process, as major development projects, such as the canals of White Sea-Baltic Sea and Moscow-Volga and the railway of Baikal-Amur, which relied on the forced labor of camp convicts

Fast production practices soon resulted in vast environmental degradation and since those productivity goals were of great importance, any fall in production rate was evaluated as a provocative effort (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013: 73).

The workers were pushed to their production limits, as the political commissars kept setting higher and higher goals, almost unaware of the dangers of construction, manufacture, smelting, etc. The fact that many of the workers were illiterate and others were first-generation workers who were forced to leave the countryside, contributed to the confused and dangerous production process. Those people, with a weak understanding of production and safety issues, were forced to raise factories out of the mud without adequate equipment, tools, clothing, and food (ibid: 87-88).

Furthermore, the creation of heavy industry combined with the progress of socialism, and the organization of national defense from hostile capitalism combined with territory preservation –advocated the creation of a powerful military state. For all the aforementioned causes, the soviet authorities' goal was to develop the world's most advanced technology (ibid: 88). Stalin's first three "five-year plans" -that were implemented between 1929 and 1941 (Nazi invasion)-had had a tremendous economic impact. During that period, several 9,000 new enterprises were established and industries for farm equipment, chemicals, aeronautics, etc., grew fast (ibid: 89). Those Stalin's "five-year plans" included rapid industrialization, urbanization, collectivization, mining, construction, irrigation and other activities with direct environmental impact, such as the construction of roads, railroads, and canals, the straightening of rivers, the closing of waterways, and farming (ibid: 104). They turned to the north for metals and timber and dreamed of transforming the empty land into agricultural, while obstacles, such as climate and ravaging, did not obstruct the effort (ibid: 104).

During WWII (1941-1945) vast agricultural and forest territories of the Soviet Union were ruined. The death toll was several more than 20 million people. Stalin, during the post-war years, instead of focusing on the improvement of human lives, implemented the fourth five-year plan aiming to double the industrialization projects. Furthermore, in 1948 he advanced the plan for the transformation of Nature, which included afforestation, irrigation, and other projects and its main goal was to transform European Soviet Union into a *well-functioning machine* (ibid:293).

Specifically, after WWII and a drought in 1946 which decreased agricultural production and led to the last mass famine in the Soviet Union, Stalin undertook the commitment to rebuild the nation fast and prevent such incidents. To achieve that, in 1948, the Communist Party voted unanimously for the so-called Stalinist Plan for the Transformation of Nature. This plan had three components: i) the further reshaping of rivers to serve irrigation, industry, agriculture, transport, and cities through hydroelectricity, ii) the creation of forest defense belts, by planting trees, to protect farmlands from draught and hot dry winds and iii) the development of ancillary transportation networks, such as roads, railroads, and dams. (ibid: 122-124).

Furthermore, the post-war years led to the development of Siberia, with its vast mineral, fossil fuel, water, and forest resources. Soviet planners and engineers aimed to secure a long-term economic future for the Soviet Union, beyond the reach of a future invader. Their more specific goals were to tame rivers by constructing a series of hydropower stations and empower extractive industries – oil, gas, coal, rare metals, and iron- and secure water through a series of diversion canals, for Central Asian agriculture. Moreover, they focused on Siberian coal since much of their reserves had been exhausted and the rest were of poor quality or difficult to extract. These plans and practices led to a quick and permanent change in the face of Siberia with serious long-term human, economic, and ecological costs. (ibid: 132-134).

During the Cold War era, Soviet Union adopted unplanned waste disposal practices during the production of nuclear, chemical, and biological weapons, as the other four original nuclear powers did (United States, France, Great Britain, and China). These practices led to the permanent destruction of many ecosystems across this vast landscape. Under Stalin, scientists and engineers had enormous pressure to develop and then produce massively these weapons, which led them to botch, take shortcuts, and ignore common sense and decency. Hiding under the cause of "national security," high-level and low-level nuclear and other toxic wastes were dumped in lakes and rivers, and even in the oceans (ibid: 135).

They developed reactors that used water from a lake or river that cooled the reactor, which was piped out back into the lake or river contaminated with radioisotopes and at a higher temperature than normal that was destroying ecosystems. While developing those weapons, they moved people out of their homes (e.g. Nenets from Novaia Zemlia, Kazakhs from Kazakhstan), to use those areas as test sites, while the nuclear waste spread far and wide and contaminated land. Those regions in the Soviet

Union that were most affected by the Cold War and the construction and testing of the mass destruction weapons were the Southern Urals, the region around Semipalatinsk in Kazakhstan, and the Arctic. (ibid: 135).

Under Stalin, the industrial world was considered the highest form of civilization. Until the collapse of the Soviet Union, this view persisted– and it persists in many countries of the world. However, the Stalinist approach to modernization differs from those in other nations. Firstly, Stalinist industrialization involved a break with the past, to reach and surpass the countries of Europe and the United States. Secondly, it ignored some economic sectors, such as agriculture, which remained on a primitive and underfunded level. Thirdly, it identified internal and external enemies, including nature itself, to ensure the involvement of the citizens in the process of the revolution. Fourthly, under the term "class struggle," nature was also an enemy of the state. Lastly, the regime of Stalin impoverished the masses to reach the nation's economic goals (ibid: 135-137).

After the death of Stalin in 1953 and during Nikita Khrushchev's era[19], the Soviet Union followed another series of great plans to transform nature in the name of the glory of the proletariat (ibid: 135-137). Khrushchev promoted the de-Stalinization idea, which besides the reformation of society and politics, it also included reformations of the natural environment, by the construction of irrigation systems and canals or the expansion of industry and the construction of nuclear or metallurgy or energy plants, the increase of the production in agriculture and food industry, by mining, and so forth (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:141). These practices led on the one hand to rapid economic growth (e.g. energy production increased five times and so on), and on the other hand to the environment's and natural resources' great pressure (ibid: 144).

Stalin's idea of *"messianic revolutionary romanticism",* was abandoned by Khrushchev's promotion of *"peaceful coexistence"*. However, as Cold War was still present, he still maintained the military, chemical, and nuclear weapons industry, with their correlated environmental costs (Kangaspuro, 2006:45 & Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:144-146). In mid-1957 a prohibition imposed by the state on the media that forbade the publication of incidents such as

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[19] Nikita Khrushchev (1894-1971) served the Communist Party of Soviet Union during the period of (1953-1964) as its first secretary (https://www.britannica.com/biography/Nikita-Sergeyevich-Khrushchev)

industrial/military accidents, radioactive pollution, forest fires, and so on so forth, was effective enough to prevent publishing articles concerning the nuclear testings (over 300 in number) conducted during 1949-1962 in Kazakstan or the 1957 explosion of a nuclear waste dump in Kyshtym, etc (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:147). He sought to increase agricultural and industrial production to correspond to the American economic practices by indicating the superiority of socialism and not to conform with the Soviet reality(ibid: 148).

His designs did not include environmental and climate restraints, instead, as he was a child of Stalinism, he perceived nature preserves as "wasted" unproductive land (ibid: 148). That means that instead of abolishing the perception of nature as an enemy of socialism, it was under his leadership, that the campaign of "Virgin Lands" or in the Russian language "*Osvoyeniye tseliny*" was introduced (ibid: 148). By this term, Khrushchev promoted the extended cultivation of more than 40 million hectares of land (or 23 percent of the total USSR's area) that was previously uncultivated mainly in Siberia, Kazakh virgin steppe, and elsewhere, to increase grain and corn production (Erley, 2021: 113 & Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:149-150). The concept of this idea was mainly to enable the nation to produce enough grain to export it, accumulate a reserve of it, or trade goods with other East European socialistic states, and lastly demonstrate the glorious future of Communism as it reaches America's level (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:151). Under this campaign Khrushchev also urged the creation of *"agrogorod"*, a new large agricultural socialistic city, that would combine industry and agriculture (ibid: 151). As this campaign symbolized communism's reborn and de-Stalinization, it gained a positive response, and thousands of multiethnic, multireligious, and multicultural people were gathered, others voluntarily and others were recruited, to tame the virgin lands, to learn the technology of tractors and the methods for cultivation grain and corn (ibid: 153).

However, the harsh climatic conditions led mainly to poor harvests, not only of the Virgin lands but also of the previously cultivated lands, which resulted in a shortage in supplies and the embarrassing purchase of more than 10 million tons of grain from the capitalist countries, in 1963 (ibid: 155). In February 1964, Khrushchev accepted the failure of the plan and stated that those Virgin lands scourged by droughts will return to pasture (ibid: 156). This was difficult to happen as so many people depended on their new lives in those lands and regions and thousands of rubles were spent by the

authorities on the infrastructure of those regions. The "virgin land" campaign was set out together with the corn campaign which also failed (ibid: 157). The aforementioned failure in agricultural policy, led to the subsequent removal of Khrushchev, in October 1964 and his replacement by Leonida Brezhnev (ibid: 156).

Under Leonid Brezhnev the Soviet Union entered the stage of the so-called "developed socialism", delivering the message that the socialist society passed in a more advanced stage (in comparison to Stalin's and Khrushchev's eras) able to compete with the capitalistic states of the West (ibid: 187). However, the environmental problems persisted even during this era, as the economic priority during the previous years, led to air and water pollution, contamination, deforestation, and soil erosion (ibid: 187). Even if, under Brezhnev, legislation on environmental protection was released, however, his "Food program" and the prioritization of heavy industry, only worsened the former environmental degradation (ibid: 189). At the end of Brezhnev's era, the Soviet Union was transformed from agrarian to the second largest economy in the world, and laws, policies, and statutes released under the advice of specialists continued the economic growth while contributing to environmental improvement and awareness (ibid: 254). One sign of hope was the development of environmentalists groups, that stood against the former state's management of development, economy, and natural resources (ibid: 254).

After the death of three successor leaders –Brezhnev, Andropov, and Chernenko- during the 1980s, and the brief era of the leadership of Mikhail Gorbachev (1985–1991), the Soviet Union changed politically, economically, and socially. Gorbachev introduced the policies of *"perestroika"* and *"glasnost"* that encouraged public involvement in the beginning (ibid: 257-259). His era represents a new opening of the Soviet Union to European modernity. Gorbachev's "new thinking" signaled the alternation of the way that the Soviet leaders conceived the West (Kangaspuro, 2006:45). However, *"perestroika"* failed to prevent the Soviet Union from collapsing and marked its final years. During Gorbachev's era, the political and economic system of the Soviet Union became unstable and it finally collapsed in December 1991, when he resigned (ibid: 257-259).

Environmental awareness and activism among Soviet citizens became more extensive, as they realized that their living environment was polluted, that all its ecosystems were damaged, and that their health was under threat, while at the same time started questioning whether the soviet system itself was the generator of their

problems (ibid: 260). Given the great number of nuclear power plants that were constructed close to major cities, the mines that extended from Siberia to the Arctic, the construction of hydropower stations and canals, the projects of river diversion, etc. were criticized not only outside the government but within it also (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:260). When the Soviet Union collapsed, even if Gorbachev tried to impose reformations in the socialist system, most soviet citizens were convinced that this system was not able anymore to secure their environment (ibid: 261). With the explosion of the nuclear plant of Chernobyl the citizens of the Soviet Union and specifically the citizens of Ukraine and Belarus were extremely pressured (ibid: 261).

The purposes of all Russian leaders -from Peter the Great to Michael Gorbachev- were to civilize, modernize and europeanize the uncivilized parts of society and economy and thus, catch up with the West. Through the efforts of all, the modernization of the Soviet economy was at a level achieved. It was under the leadership of Stalin that the Soviet Union started to adopt Europeanized production and economic techniques which continued until Brezhnev's' era and the 1970 stagnation. Nikita Khrushchev followed the history of the Soviet Union and promoted the ideas of "Leninism". He adopted practices in the development of the economic, technological, and educational sectors to achieve a communist society, thus his aims did not differ a lot from the other leaders who were aiming in surpassing the West. Of all of the aforementioned leaders, only Vladimir Lenin and Michael Gorbachev were the most European-oriented and followed the legacies of Enlightenment and modernity. Lenin believed that the West will gradually follow the Socialist paradigm of modern society while Gorbachev's "new thinking" was inspired by the notions of liberalism and European democracy (Kangaspuro,2006:49).

The Soviet Union can be seen as an experiment for the creation of the modern state after the collapse of the Russian Empire. Some scholars argue that the Bolsheviks' revolution is connected and similar to the 18th-century European enlightenment and the formation of modern societies. Both the ideologies of Western liberalism and Soviet socialism had their roots in the European enlightenment and the pollical economy of Great Britain. Moreover, both ideologies conceived history as a consequence of human progress and both were based on the idea that science and the conquest of nature will provide material wealth and subsequently result in happiness. (ibid:50).

Soviet Union's purposes were based on the construction of a better future and modernization of society. The Bolsheviks promised a better materialistic future within the working society, political and social equality, and a belief in a better future in general. For the accomplishment of these projects, the Soviet Union undertook the role of the missionary. Its people were the tool for the accomplishment of the task (Kangaspuro, 2006:50). Even if the Soviet Union did not manage to expand and maintain a socialist society and preserve the nature and environment, its contribution to modernity cannot be denied.

3.2 ECOLOGICAL-ENVIRONMENTAL MOVEMENTS IN USSR

Before Stalin's era, some organizations that were interested in environmental conservation and preservation were formulated. Furthermore, some voluntary associations, amateur societies, and movements were established, which aimed at the protection of nature and culture (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:110). VOOP (the All-Russian Society for the Protection of Nature) and TsBK (the Central Bureau for the Study of Local Lore) were the most influential and expanding organizations, that had a minimal government and party interference (ibid: 111). However, "civil" organizations and independent intelligentsia disappeared and Soviet party-guided organizations took their place (ibid: 113). Significantly, the intelligentsia was seen as potential technocratic enemies and were obliged to prove their loyalty to the communist ideas. Ecology specialists had to be careful and not to insist on the idea that nature was valuable to humanity, because this might suggest distance from the idea of proletarian-socialistic reconstruction (ibid: 113). During the 1920s, there was a struggle between the old -well-educated- intelligentsia and young -narrow-minded and ambitious- naturalists. The first was mainly characterized as the "tsarist remnants" while the latter spoke against "the naked idea of preservation" insisting on the utilization of natural resources (ibid: 113-114).

During the 1940 and 1950s, the VOOP's leaders tried to keep the movement alive, balancing with the Stalinist political and ideological structures, by drafting model decrees, establishing contacts with bureaucrats, conducting research, and publishing reports promoting the idea that the preservation of nature was also crucial for economic development (ibid: 115-116). Unfortunately, the state emasculated the environmental movement by arresting, interrogating, and torturing even scientists, who seemed to oppose Stalinist programs (ibid: 116). Therefore, the environmentalists preferred to

promote their aims and at the same time demonstrate their loyalty to the regime, as they presented themselves as part of Soviet scientific public opinion. In this way, except for the protection for "*zapovedniks*", they protected small islands of pre-revolutionary civic society, which were destroyed during World War II (ibid: 116).

During the 1960s VOOP counted almost 19 million members in the Russian republic, 6 million members in Ukraine, and smaller numbers in other republics. It was the largest organization for the conservation of nature and equivalent to what we know today as an NGO, however, it did not have authority and autonomy and VOOP's leaders had not much to say about serious issues such as the pollution of Lake Baikal. During Khrushchev's era, another important group for the preservation of the environment appeared. It was the Commission for Nature reserves, established in 1955. This commission interconnected activists from other associations (e.g. VOOP, MGO[20], and MOIP[21]). From these associations, only MOIP maintained a kind of autonomy during both Stalin's and Khrushchev's eras. In 1954, during a conference about nature preserves, which was organized by the aforementioned organizations and other scientists, a protest against Virgin Lands was represented (ibid:177-179).

During Brezhnev's era, many discussions were triggered among Soviet scholars on environmental issues. Andrei Sakharov[22], in 1968 issued an essay that was published underground in the Soviet Union and later in western European countries, under the title "Progress, coexistence and intellectual freedom". According to his words:

> We live in a rapidly changing world. Industrial and water management projects, cutting of forests, plowing up of virgin lands, the use of poisonous chemicals – all this is changing the face of the earth […] Sooner or later, this will reach a dangerous level. But we do not know when (ibid:245).

During the same period Soviet scientists, such as Vladimir Vernadsky, showed a renewed interest in ideas outside the Soviet Union which also led to the reexamination of ideas of soviet environmentalists whose ideas and theories have not been favored in the past.

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[20] MGO was Moscow society for Geographical Organization

[21] MOIP was Moscow Society of Naturalists (in Russian language: Московское общество испытателей природы)

[22] Andrei Dmitrievich Sakharov (1921-1989) was the father of soviet nitrogen bomb, and during 1975 was awarded with the Peace Nobel prize for his work on human rights. Except his work on human rights, he was focused on banning nuclear tests (https://www.nobelprize.org/prizes/peace/1975/sakharov/facts/) (ibid:245)

In Gorbachev's era and during the concept of perestroika the environmental movement rose. Environmentalists were organized and involved politically and along with other civic organizations; they helped in the collapse of the Soviet Union. As civil activism was tolerable under the concept of glasnost, thousands of organizations (environmental groups and NGOs) emerged into the political scene, counting 30,000-50,000 members. They organized protests and even took part in electoral politics (ibid:276).

During this period several informal (*neformaly*) organizations were formed and increased rapidly. Awareness of disasters, such as Chernobyl, motivated protestations of those informal organizations. However, this enthusiasm waned, in the early 1990s, as the citizens faced growing economic difficulties (ibid:283).

These environmental organizations, in most of the republics, have had a dual political perception. They linked both environmental and nationalist concerns, as they perceived that environmental degradation was an outcome of both faults of socialism and Moscow's desire to exploit and degrade other republics while preserving Russia for Russians. As of Dawson, these movements were characterized as *"eco nationalism"* (ibid:284). Such environmental-nationalists' organizations were also crucial in Ukraine and Belarus, as they were seeking to inform about the consequences of Chernobyl disaster as well as about compensation rights for the sufferers (ibid:286).

3.3 CHERNOBYL

Historically, humanity witnessed major catastrophes that affected negatively the social, economic, and environmental life of the region in which they occurred. The outcomes of the nuclear disaster in Chernobyl, affected the population negatively for a long time. (Karácsonyi, Hanaoka, and Skryzhevska, 2021:15). The "*Chornobyl"* power plant was constructed within the territory of Ukraine, which -by the time of the accident (1986)- was a country member of the former Soviet Union (Okada, Cholii, Karácsonyi, Matsumoto, 2021:215). Ukraine was surrounded by Poland, Russia, and Belorussia, its population reached several 50 million people, it constituted the second largest republic of the Soviet Union and was considered to be the Union's "*breadbasket*". However, many Ukrainians support that their country had been a laboratory for Stalin's collectivization operations, that it paid a death toll of 6,000,000 people, after the state-induced famine in 1932-1933, and that it was ruined to a big extent during WWII and reconstructed rapidly and massively after the war (Petryna, 2011:43).

It was during the 1960s that the construction of the nuclear theme park of Chernobyl took place, to demonstrate to the world, the advanced and organized socialist society (ibid: 43). The Chernobyl power plant was located only two kilometers away from the town of Pripyat (a town constructed for the housing needs of the plant's employees and their families)[23], twelve kilometers away of the small, quiet Ukrainian town of Chernobyl and ninety kilometers away from Kyiv. Its construction started in 1970, while the first reactor started to operate in 1977, the second in 1979, the third in 1981, and the fourth in 1983 (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:264, 266). When the decision for this construction was ordered by the soviet authorities, nothing could indicate the environmental catastrophe that was yet to come (ibid: 264, 266).

Historically, the Chernobyl catastrophe constitutes the worst technological anthropogenic (man-made) environmental disaster (Jeanhee Hong, 2001: 333 (ibid: 263) and the most often mentioned industrial accident that caused displacement (Brooke Havard, 2007: 8). The Chernobyl accident constituted an "anthropological shock" for the Western parts of Europe, as they realized that their "secure living" in their risk societies was depending on the experts of all kinds. The rest of Europe also suffered a different kind of collapse. In the Soviet Union, the Chernobyl disaster was interrelated to its collapse in general (Petryna,2011:25).

On the morning of 26 April 1986, a series of explosions at the Chernobyl nuclear power station -that destroyed the fourth out of its four reactors- and its subsequent ten-day graphite fire, led to the spread of nuclear fuel and radiation over the surrounding environment of thousands of square kilometers (Meybatyan, 2014: 64). Specifically, the nuclear reactor was torn apart by two huge explosions, that lifted into the air its 2000 tons lid which fell on the roof of the building, destroying it. The burning materials that fell on the ground spread the fire on the third reactor, which caught fire instantly. This fire was extinguished after 5.00 a.m. by the self-abnegated actions of the firefighters. However, the fourth reactor was uncontrollable and open, still burning and releasing into the atmosphere graphite fumes and radiation. Furthermore, the lower

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[23] Pripyat was the ninth "*atomgrad*" or "*atomograd*", meaning a nuclear-city. Nuclear cities were small industrial cities with 30,000-80,000 inhabitants, that were designed and constructed mainly in Western Soviet Union, in order to serve the purposes of nuclear plants. It was an urban and public project that served both nuclear economy and propaganda. For young men and women an atomograd was a chance to escape from agrarian life to urban industrial modernity (Wendland, 2021)

floors of the factory were filled with flowing radioactive lava and nuclear fuel. In the next ten days, the land, water, and atmosphere were polluted by 100-200 megacuries of radioactive substances that were released after the explosion, spread mainly into the northern hemisphere (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:265).

The Soviet Union's officials blamed the station operators for the accident; however, it was revealed that this environmental catastrophe came as a result of a series of human errors based on the entire Soviet philosophy of inadequate safety parameters and the refusal to acknowledge the dangers in operating the nuclear technology systems (ibid: 263).

It is estimated that about 230,000 people in the European parts of the USSR (specifically, Russia, Belarus, and Ukraine) were exposed to radiation, either externally or internally by the consumption of contaminated water and food. The following 20 years, revealed an increasing number of people affected. (Meybatyan, 2014: 64).

The Soviet authorities refused to inform the public about the accident, they remained silent and failed to act immediately after the explosion (Jeanhee Hong, 2001: 333). After two days, specifically on the morning of the 28th of April, Swedish workers in a nuclear power station were the first to detect an increase in radiation levels (ibid: 264). After diplomatic pressure, the government made a brief statement about the nuclear accident (Jeanhee Hong, 2001: 333). The official governmental announcement came on May 14th (Petryna,2011:96).

 After the Chernobyl's environmental disaster, two solutions were found to face the negative effects on the local population. The first one was to resettle the people affected into non-contaminated areas and the second was to radiologically decontaminate the area and prevent the further expansion of the pollution. The resettlement and the subsequent establishment of new homes for the locals appeared to be the more expensive solution, yet the safer one. (Tykhyi 1998).

Roadblocks were established around the area to prevent private cars from leaving without legal authorization and buses were chartered from outside the contaminated zone. This practice was used to limit the spread of contamination from the exclusion zone and to facilitate the evacuations, which began the next day (36 hours after the explosion), beginning with several between 45,000- 50,000 residents and plant employees of Pripyat (Meybatyan, 2014: 63-64) and among them 17,000 children (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:265). The official

announcement was short, and not informative about the dangers of radiation exposure. They also announced that the evacuation would last for only three days. This deficiency of clear orders on evacuation led displaced people to leave behind personal belongings and personal documents (Meybatyan, 2014: 63-64). After the evacuation, around 5,000 people remained in Pripyat. A number of them remained in the contaminated area to help with the cleaning activities, while others were refusing to leave without their animals and equipment (ibid: 63-64).

As an answer to panic and to avoid the evacuation of millions of people, the government increased the permissible limit of the annual dose of absorbed radiation in Kyiv. However, it was decided that the children between 8 and 15 years old would be sent to summer camps, and pregnant women or mothers with young children and infants were sent to hotels, rest houses, sanatoria, and tourist facilities, which practice divided the unity of many families without considering the long-lasting social effects (Meybatyan, 2014: 63-64). After some days, the authorities started to evacuate other heavily contaminated settlements such as Chernobyl and the Gomel region of Belarus. The evacuation project of 188 towns and villages in Ukraine and Belarus was completed in August of the same year, resulting in the removal of 166,000 people, as well as 60,000 cattle and other farm animals. Some of the latter became sausages that were sold throughout the Soviet Union (except Moscow district) (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:265). The vehicles used for the evacuation were buried near Chernobyl, and the "exclusion zone" was established, which was guarded by armed soldiers that were instructed to kill all animals (even pets) that tried to exit the zone (ibid: 265).

To serve the evacuees' housing needs, thousands of apartments were made available to them in urban centers, and 21,000 new buildings were constructed in rural areas (Meybatyan, 2014: 63-64). From 1986 to 1987 the total population of this area was transferred mostly to large cities such as Kyiv, Minsk, Chernihiv, and Zhytomyr (Karácsonyi, Hanaoka, and Skryzhevska, 2021:18), approximately reaching the number of 115,000 people (UNSCEAR/IEA). Some of them were transferred to Slavutich, a town that was constructed in 1988 to be inhabited by the evacuees of Pripyat (ibid: 18), mainly young people searching for bigger salaries and better apartments, were hired by

the power plant of Chernobyl when it started to operate again[24](Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:267). However, people were spread throughout the USSR (Meybatyan, 2014: 63-64).

During the next two weeks, military helicopters were employed to drop tons of sand, clay, dolomite, and other materials into the burning reactor, while thousands of people were employed to suppress the fire and mitigate the accident. Furthermore, in August 1986, the authorities ordered the construction of a sarcophagus, beneath the plant, to enclose dangerous radioactive elements, prevent them from spreading and minimize further radiation environmental contamination. For this five-month project, ten thousand people were employed, working on a daily basis under dangerous conditions. They poured 360,000 tons of concrete and placed 5,000 tons of metal girders and plates in total and finally constructed the sarcophagus, which encloses more than twenty megacuries of radioactive materials and more than 180 tons of nuclear fuels (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:266-267). Furthermore, the authorities employed workers driving trucks to wash down the main roads daily for months, while others were employed to scrape the topsoil of the most contaminated areas, load it into boxes of steel, and burry it in nearby grounds (ibid: 266).

Those who helped the cleansing activities of the nuclear disaster zone were the so-called "liquidators", who exceeded the number of 800,000 men, and were exposed to high levels of radiation (Ionesco-Mokhnacheva-Gemenne, 2017:91). Specifically, in the period 1986-1987, a total number of 292,244 men[25] worked as "liquidators", while from 1988 to 1989 the "liquidators" reached several 566,402 men[26], with a total of

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[24] The remaining reactors of the Chernobyl power plant restarted to operate few months after the accident. In October of 1986 it was unit one that started to operate; on November of the same year unit two and on December of 1987 unit three (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:267). After Chernobyl's re-operation, the International Atomic Energy Agency (IAEA) demanded its permanent closure at last in 1994 (Marples, 2010:15).

[25] During this period, the exact numbers of liquidators are the following: 160,000 men came from the Russian part of the Soviet Union, 70,371 men came from the Belarussian part and 61,783 men came from the Ukrainian part (UNDP, UNICEF, UN-OCHA & WHO Report 2002:32, table 2.2).

[26] During this second period, the exact numbers of liquidators are the following: 40,000 liquidators came from the Russian part of the Soviet Union, 37,439 men came from the Belarussian part and 488,963 men came from the Ukrainian part (UNDP, UNICEF, UN-OCHA & WHO Report 2002:32, table 2.2).

858,646 men used as such (UNDP, UNICEF, UN-OCHA & WHO Report 2002:32, table 2.2). Those men were mainly young, between twenty and forty years old, and as to Ukrainian governmental statistics, more than 12,000 of them died (Marples, 2010:14). Those who managed to survive suffered from long-term health problems (Ionesco-Mokhnacheva-Gemenne, 2017:91).

Due to the explosion, almost forty percent of the radioactive debris that was released, fell within a 30-kilometer zone (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:266). This 30-kilometer area is considered to be the most contaminated and it is called the "Exclusion Zone". It includes the power station and its surroundings within a perimeter of 30 km, as well as Pripyat city with 50 thousand people, Chernobyl town, and several villages (Dávid Karácsonyi, Kazumasa Hanaoka, and Yelizaveta Skryzhevska, 2021:19).

However, as the spread of radioactive materials depended on weather conditions and their size and form, they were deposited unequally throughout large areas of Ukraine, Belarus, and Russia and were spread into the soil, water, buildings, roads, and so on so forth (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:266). The areas that were most affected were rural, forests, wetlands, pastures, and arable. The contamination level is usually counted in the average of radioactivity Cs (cesium) per square Km. When the measurement exceeds one curie per square kilometer, then the area is considered to be contaminated (ibid: 267-269).

After the explosion, the contamination areas, according to their Cs levels, amounted to 37,600 square kilometers in Ukraine, 43,500 square kilometers in Belarus, and 59,300 square kilometers in Russia, amounting to a total of 140,400 square kilometers (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:267-269). These territories were divided into four (4) different zones, according to the contamination and radiation levels. Except, for the aforementioned "exclusion zone" that was the first to be evacuated, a 30 km radius zone all around the explosion, that was managed by the Zone's Administration; in the second zone the resettlement was mandatory; In the third zone the resettlement was voluntary and guaranteed, and in the fourth zone the resettlement was only voluntary, and the area was radiologically monitored (Petryna, 2011:104). The bigger part of the "exclusion zone" is within the Ukrainian territory. The land that is considered to be contaminated in Ukraine covers 8,9 percent of its territory while in Belorussia the contaminated land covers 23 percent of its territory (ibid: 26).

The definitions of "Exclusion zone", "Contaminated area" as well as "resettlement area" were established in 1988. The "resettlement area" was also evacuated and the population (almost 220 thousand people) was resettled at the beginning of the 1990s to non-contaminated areas, as the main state position supported that if there is no possibility of producing healthy food products, the population cannot be forced to remain in the area (Karácsonyi, Hanaoka, Skryzhevska, 2021:22-24).

The "Exclusion Zone" zone will never be free from contamination and, thus, remains uninhabitable (Brooke Havard, 2007: 8). For example, for the decay of Uranium we need one billion years, and for the decay of thorium, we need fourteen billion years (Alexievich, 2016:177-178). Even today the "Exclusion Zone" remains closed. It only opens in special cases such as the repatriation of a very small number of elderlies and voluntaries (*samosyoli*) (Lochard 1996) (Dávid Karácsonyi, Kazumasa Hanaoka, and Yelizaveta Skryzhevska, 2021:20).

Some repairmen had to relocate to Kyiv, sixty miles south of the disaster zone, where they could live in government-built housing units. They spend two weeks at work in the zone and then two weeks at home. As Petryna states in her article "The science and politics of Chornobyl-exposed populations (2004)

> I had the chance to meet one such worker. Specifically, he said that he was a "sufferer", a legal category created in 1991 for people who were impacted by the Chernobyl disaster". The worker was dissatisfied with his pay of around five dollars per month in light of the rising cost of living, particularly in regard to food. The man couldn't find any other work, and he felt hopeless and helpless as a result. He claimed he had looked elsewhere for work, but nobody would hire him because of his poor health and checkered employment past. The man attributed his hardships to the Soviet Union's shaky handling of the aftermath and the legal and medical systems he was unable to comprehend.

In a country where the government normally exerts tight control over its citizens' whereabouts, the sudden dispersal of so many people has caused unprecedented difficulties. The evacuees were dispersed across the countryside, often staying in the homes of locals or makeshift barracks. Many people had to leave their homes with just the clothes on their backs and perhaps some important documents and cash (Schmemann, 1986).

At the beginning of the 1990s and until 1996 the second wave of resettlement of more than 220,000 people (UNSCEAR/IEA) took place, while in the period between

1996-2005 several more than 50,000 people were displaced in Ukraine (IAEA). As of the 2002 report, that was commissioned by UNDP and UNICEF with the support of UN-OCHA and WHO, under the title "*The human consequences of the Chernobyl nuclear accident: A strategy for recovery*" the total number of evacuated persons during the period of 1986-1990 was 118,400[27], while the total number of resettled people within the period of 1991-2000 was 231,000[28], reaching a total number of 350,400 people, while several 11,600 people were still waiting for the resettlement (UNDP, UNICEF, UN-OCHA & WHO Report 2002: 66, table: 5.3). However, the exact numbers of displaced persons vary between a total of 300,000 to 500,000 people including those who resettled voluntarily. Outside the "resettlement zone" the people were free to decide whether they should stay or go (Karácsonyi, Hanaoka, and Skryzhevska, 2021:24). Almost 5-6 million people still live in "contaminated areas" as it was reported, while 100,000-200,000 people still live in severely affected areas (ibid: 24), (WHO, 2005), (Chernobyl forum 2005-2006: 42).

The victims – and among them children – of the Chernobyl explosion, that were exposed to radiation, amounted to a total of seven million people. They have been divided into several categories. Specifically, Ukraine recognized fifty categories, while Belarus and Russia recognized seventy categories of people affected (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:269-271). In Ukraine the number of those who were called *"invalidy"* (invalids) increased year after year, as the health of people was affected and the prerequisites for the recognition of this status changed. Thus, in 1991 only 200 people were recognized as "invalid", in 1994 were recognized 64,500 people as such and in 2001 the number increased to 91,000 people (ibid: 269-271). Specifically, the sufferers of Ukraine were further divided into several categories. The first category included those 50,000 people who were deemed to be incapable to work or were diagnosed with some form of acute radiation sickness (ARS)[29]. The second category included those people that took part in the cleaning

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[27] Of this number, 24,000 people were from the Belarussian territory, 3,400 were from the Russian territory, while 91,000 were from the Ukrainian territory (UNDP, UNICEF, UN-OCHA & WHO Report 2002: 66, table: 5.3).

[28] Of this number, 111,000 people were from the Belarussian territory, 49,000 were from the Russian territory, while 72,000 were from the Ukrainian territory (UNDP, UNICEF, UN-OCHA & WHO Report 2002: 66, table: 5.3).

[29] The Acute Radiation sickness (ARS) includes a series of syndromes due to exposure to ionizing radiation and it occurs at doze ranges over 200mq. The main syndromes included are: neurological, gastrointestinal, cardiovascular, bone marrow and so on

works during 1986-1987 or those who were evacuated, amounting to 350,000 people. The third category included those who took part in cleaning works during 1988-1990 or those who lived in the evacuation or guaranteed voluntary resettlement areas, counting up to 550,000 people. And lastly, the fourth category included those who currently live or work in the zones, counting up to 1,200,000 people. Children are not included in the aforementioned numbers (Petryna,2011:106).

Those people that were recognized to come under one of the aforementioned categories, were entitled to receive different forms of compensation, such as better salaries or pensions, free medicine, free public transportation, access to sanatoria, and so on (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:269-271). Given that, the Soviet labor Code provided the norm „equal pay for equal work" (Kangaspuro, 2006:154), there were injustices in the Soviet workers' salaries, thus the increase in payments, salaries, and pensions to work in the Exclusion Zone could constitute an encouragement to return to the contaminated areas. Specifically, during Stalin's era only the intelligentsia (professors and scholars) received better salaries and were among the wealthiest people in the Soviet Union (ibid:45), while manual workers received better salaries than office workers. In Gorbachev's era, those differences became more evident. During the modernization processes, information about life in the West reached the Soviet public. The expectations of the citizens on consumerism increased. The worker's purchasing power was not equal to their work offering. This led to corruption and thus the moral decay and the reduction of the notions of loyalty, solidarity, and commitment that characterized the Soviet society (ibid:66-67).

Those benefits were given according to several categories. The "disabled" were granted higher pensions and better benefits than those who were deemed as sufferers. Those people who decided to work in the zones were receiving wages two or three times bigger than those that they would receive doing the same job outside the zone (Petryna, 2011: 107). Moreover, those who have had professional occupations (militaries, doctors, and so on) were receiving better salaries than those who were not professionals even if they were taking the same exposure risks (ibid:117-119). As it is mentioned above, those who were deemed as "disabled", obtained better benefits and allowances than those who were recognized as sufferers. And those who were

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(https://www.sciencedirect.com/topics/medicine-and-dentistry/acute-radiation-syndrome)
(Petryna,2011:61-62)

recognized as sufferers were better off than those who were not recognized as such. The transition from a sufferer to a disabled person was a possibility built into the social system. Those who have acquired the sufferer recognition, have had to prove it constantly during their lifetime to maintain it (ibid: 107). In the meanwhile, there were claims that some people -less disabled or not disabled at all took advantage of the compensation system, by securing benefits for themselves, without deserving them. The compensation program constituted an economic burden to the states; therefore, many payments have been limited or they have been cut. (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:269-271).

Finally, the death toll of the accident is recorded to amount to several 5,000 people. The International Atomic Energy Agency (IAEA) estimates that this number is too low (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:269-271).

Those people who managed to survive, still carry the exposure and relocation traumas. Even if they are relocated, it is undeniable that they suffered the psychological and physical damage of having to leave their homeplaces immediately and these traumas are deemed to be responsible for the increase of mental illnesses, PTSD, and criminality (ibid: 271). Many of the relocated people, mainly those that left from rural environments, are still facing difficulties in adapting to their new urban resettlements, and this could be an explanation for why they decide (mostly elderly) to return permanently to the exclusion zone (Josephson, Dronin, Cherp, Mnatsakanian, Efremenko, Larin, 2013:271).

Five years later, with the break-up of the USSR, the Chernobyl environmental crisis cannot be underestimated in terms of migration (Meybatyan, 2014: 63-64). Chernobyl, one of the worst nuclear accidents to date was caused by human error, resulting in a complex cluster of human problems that displaced the majority of the affected populations and trapped more in contaminated areas. Although the emergency evacuation following the Chernobyl disaster was conducted fast and effectively, there was no clear knowledge of the far-reaching implications and no planned resettlement plan to address these consequences in the medium or long term. Determining obligations and responsibilities for providing safety to migrants is not easy, particularly in the context of post-Soviet emigration, where it is impossible to differentiate between migrants seeking economic possibilities and those fleeing health dangers.

The aftermath of Chernobyl's environmental catastrophe was a sharp increase mainly in children's mortality and morbidity, the creation of dozens of thousands of

environmental refugees, the long-term environmental contamination including both soil and water, and finally inconvertible changes in the natural environment and ecosystems. (Brooke Havard, 2007: 8).

3.4 RESETTLEMENT AFTER THE CATASTROPHE

As the evacuation and resettlement processes, are interconnected on the one hand with the migratory patterns that came as a result of the Chernobyl's environmental disaster and on the other hand with the state control of the population of the contaminated areas as an outcome of the biopolitics in the Soviet Union and its successor republics, it is important to devote a special section of this thesis to the analysis of those processes.

The 'ungovernable' natural environment and human bodies are at the center of bio-politics. Since radiation is invisible and imperceptible, issues relating to the so-called "radiation exposure safety level" are issues about the scientific construction of invisible reality and the definition of its meaning. Since radiation can contaminate the entire environment, including water, and air, and, eventually, can damage genes and destroy the self-reproductive capacity of biological bodies, this is a classic example of a "governability" problem (Nobuo, 2017: 180).

As mentioned above, the Chernobyl's nuclear accident occurred in the mid-1980s, during Gorbachev's era, when the Soviet Union was undergoing processes of economic and political restructuring to minimize deep economic crisis and achieve democratization, the so-called *"Perestroika"* [30] and *"glasnost"*. However, the economic reformation processes brought the opposite results, thus the acceleration of the decline and chaos. Subsequently, under these economic circumstances and as the funds needed to manage the Chernobyl catastrophe and its aftermath, were enormous - surpassing the total economic benefits of the nuclear power industry in the Soviet Union- coping with this extreme situation properly was rather difficult (Okada, Cholii, Karácsonyi, Matsumoto, 2021:215). Furthermore, the responsibilities for the recovery effort were either imposed on central administration or the local authorities, and the coordination between them was rather challenging. As of a 2004 document collection issued in Ukraine on the 18th anniversary of the Chernobyl's catastrophe, and according

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[30] Perestroika means restructuring in Russian language (https://www.britannica.com/topic/perestroika-Soviet-government-policy)

to general statistics that were provided in it, the number of relocated people from the contaminated areas only in Ukraine reached several 164,000, that were resettled to more than 29,000 accommodation units, which were constructed and provided in 204 places across the country (ibid: 215-216). In Belarus, by the beginning of 1996, several more than 131,051 people from 400 different settlements were relocated[31] (IOM, 1997:2).

The resettlement process was divided into three stages. The first stage took place immediately, from April-May 1986. Indicatively, on April 27th the city of Pripyat was the first to be evacuated. However, smaller villages within the perimeter of 10 kilometers from the plant, like Semykhody, Shepelychi, and Kopachi, were delayed in the evacuation process, which took place on 2–3 May. The city of Chernobyl was evacuated on the 6th of May.

After the authorities recognized that the evacuation of the exclusion zone was permanent, the second phase of the resettlement started. It took place between 1986-1987 and its preparation started on May 1986. The authorities had to find the places for the relocation, estimate the number of houses needed, decide about different types of buildings, organize the construction works and finish them in a very short period [32] (Okada, Cholii, Karácsonyi, Matsumoto, 2021: 217). During this stage *"Chornobyls'kyi posyolok[33]"* were constructed, which were big estates that consisted of a hundred or more houses. To cope with the relocation and resettlement issue, several 90,000 apartments were constructed, only in the territory of Ukraine (ibid:217). The third stage took place between 1988-2002 and it was more organized. It aimed to relocate those people who lived outside the "exclusion zone", but within the voluntary "resettlement zone". However, as it was delayed, the relocated people of those areas were exposed to radiation for a long time (ibid:218). The delays were outcomes of the deep economic crisis that emerged after the dissolution of the Soviet Union and the post-soviet countries' transformation into independent countries (ibid: 218).

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[31] Of the total number of 131,051 people, for the 84,487 of them the relocation was mandatory (contamination levels greater than 15Ci/Km2), while for 46,564 of them the relocation with compensation was voluntary and they were entitled to do so by the state authorities (contamination levels 5- 15Ci/Km2) (IOM, 1997:2)

[32] For example, the villages of Kolonshchyna and Novi Opachichi in the Kiev region had to be constructed in a period of three months. As this was difficult to achieve, many families had to be relocated to unfinished houses, or two or three families had to share one apartment (Okada, Cholii, Karácsonyi, Matsumoto, 2021: 217).

[33] It means Chernobyl's settlement in Russian and Ukrainian language apartment (Okada, Cholii, Karácsonyi, Matsumoto, 2021: 217).

The aforementioned resettlement stage was divided into two sub-stages, based on two different governmental regulations. The first regulation, which was issued in 1989 by number 333, included the construction of 2,318 houses, 18 blocks of flats consisting of 1,052 apartments, and several schools and nursery schools, to cope with the housing needs of 3,370 relocated families that formerly lived in Narodvchi (Zhytomir's *oblast)* and Polissky (Kyiv's *oblast*) districts (*rayons*). The second regulation, which was issued in late August of 1990 under number 228, included the voluntary resettlement of more than 14,000 families. In Ukraine, the resettlement stages continued until the early 2000s when the government, instead of constructing and providing houses, offered compensation to those who had not received government assistance and were affected by the disaster (ibid: 218).

Even if there was an effort by the state, to cope with the situation and meet the former standards of living of the evacuees (e.g. transfer communities as a whole, transfer those who formerly lived in rural areas to rural newly constructed sites), the resettlement measures, in general, were hastily planned and followed a fast schedule which led to many difficulties that the relocated people had to face. Many of the evacuees were transferred either to settlements created hundreds of kilometers away from their birthplaces, using lands contiguous to existing towns and villages, either they were separated from their communities or they were dealing with a lack of job opportunities. These facts generated difficulties in the adjustment and integration of the evacuees into their new environment (ibid: 216). Many communities were split into two or more parts, separating evacuees, due to their big population numbers (ibid: 218). Furthermore, the economic crisis and the subsequent collapse of the Soviet Union together with the consequences of the nuclear catastrophe led to big delays in clean-up and recovery measures (ibid: 216).

Many of the relocated people had to resettle more than once. Old people were allowed to decide to return and resettle to their homeplaces -even within the exclusion zone-, known as *samosely* (self-settlers) (ibid: 218). Almost a thousand people returned to their birthplaces (Kenan Institute, 2007:22), most of them old women known as "*babushkas*"[34]whose husbands died and they have decided to resettle in their villages and farms in the exclusion zone (Scheidt, 2015: 193).

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[34] Babushka means grandmother or elderly woman in Russian and Ukrainian language.

People were told that the evacuation would last for three days. If they knew that they would leave their homes permanently they would not accept to go. That is the reason why many people returned, secretly through forest trails (Alexievits, 2016:180-182).

Besides the resettlement project, the authorities promoted a compensation system. For those who were deemed as Chernobyl victims, under the Russian and Belarusian legislation more than 70 benefits, allowances and privileges were provided, while for those recognized as such under Ukrainian legislation more than 50 privileges, allowances and benefits were provided (The Chernobyl Forum,2003-2005: 39). The allowances were either paid in cash or commodities (e.g. free children meals, health vacations[35] in sanatoria and summer camps and so on) (ibid: 39). The aforementioned benefits became the main survival factor for the Chernobyl's sufferers since many of them did not have alternative income sources. However, these governmental responses to the catastrophe planted the seeds of problems yet to come (ibid: 39).

The psychological aftermath of the Chernobyl disaster has left millions of people feeling powerless and unable to find a place in society. Unemployment is the main factor in feeling impotent in finding a place within society and losing control over one's life. Many of them would prefer to remain or return to their former villages (ibid: 35-36). The mental impact and the psychological distress caused by the Chernobyl accident is one of the largest health problems that the resettled had to face (except for children's thyroid cancers, leukemia, and so on) and had serious impacts on the individuals and their social behavior (The Chernobyl Forum, 2003-2005: 35-36). In Ukraine, the population that claimed exposure to radiation and eligibility for social protection was growing. Those who were recognized as "poterpili" constitute 5% of the Ukrainian population and reach several 3.5 million persons. Although the Ukrainian government coped with the legacy of Chernobyl with humanism, compensation processes allowed taking advantage of them (The Human Consequence, 2002: 8).

The Soviet regime's repressive style and the plant's sparsely inhabited surroundings helped in the early phases of the crisis. Lack of public information impeded an immediate response as the weeks, months, and years passed. Around

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[35] The right to free holidays had had 500,000 Belarusian sufferers-among them 400,000 children in the early 2000s. During the period of 1994-2000, the Ukrainian legislation provided a fund for 400,000-500,000 months of health holidays, per year (The Chernobyl Forum,2003-2005: 39).

Chernobyl, checkpoints were set up to prevent private cars from leaving without permission. This minimized contamination from inside the exclusion zone and facilitated the next day's evacuations, starting with 50,000 power plant employees in Pripyat. Officials and party leaders were warned that the evacuation would last three days. The official notification was short and didn't mention radiation hazards. Without explicit evacuation instructions, many personal documents were left behind (Meybatyan, 2014).

Undoubtedly, permanent or temporary relocation has long been a tried-and-true survival tactic for those facing the threat, effects, or aftermath of disasters. Nonetheless, the intricate character of disasters now poses a greater threat than ever before to uproot vast populations. The interplay between social and economic elements in the environment is a major contributor to the growing complexity of catastrophes, which in turn makes people and ecosystems more susceptible to and at risk from their effects.

Although the immediate evacuation after the Chernobyl disaster was rapid and effective, there was no clear knowledge of the long-term repercussions and no planned relocation plan. The Fukushima-Daiichi nuclear catastrophe 25 years later prompted questions about lessons learned and yet to be learned from Chernobyl in terms of preparedness and mitigation of nuclear disasters, as well as normative and implementation gaps in coping with crisis effects. In all situations, strong governments responded in a heavy-handed manner that helped evacuate immediate areas in the short term. Japan and the USSR also used top-down tactics to communicate with their citizens during nuclear calamities (Meybatyan, 2014).

Many of Kyiv's and other big city inhabitants, considered the sufferers as "parasites" of the state, who damaged the economy and avoided paying taxes. Those who suffered chose a sociality disabled by emerging capitalism. Young people from contaminated areas chose not to refer to their relation with Chernobyl, since that label was a reason for their stigmatization and their difficulty in job finding. Many of the drafters of laws for social protection, stopped participating in the processes and recognized that the Chernobyl's compensation system produced a quasi-socialist population. During 1996, socialist and communist politicians were lobbying for the continuance of the compensational support, and at the same time, the international agencies (World Bank) were arguing that the social aid system was a "dead weight" that burdened Ukrainian's economic system (Petryna, 2011:136).

V. CONCLUSION

Biological, political, and social processes that shape the everyday lives of individuals and whole populations, are better explained under the concept of biopolitics. Biopower, the power over life, is assisted by the concept of knowledge as a two-level power to transform human life. The first level is dealing with the transformation of the human body, through the processes of surveillance and discipline, while the second level is dealing with the transformation of the population through the processes of control, regulation, and welfare. According to Foucault, it was during the 18th century that the centralized state power started having concerns about the health and social welfare of populations. The health concept reshaped the notion of state. Since the individuals were living, working, and reproducing in a specific area, their capacities should be maximized. The demographic, life expectancy, marriage, and mortality statistics were useful tools to categorize the bodies of individuals and thus control their lives (Petryna, 2011:34). The evolution of life sciences has also affected the linkages between the human body and the populations. The knowledge expanded on the field of genetic codes, which affected and transformed public health, politics, commerce, medical ethics, and so on. According to Paul Rabinow[36], the self- and social-identity notions were being redefined by the evolution of knowledge and techniques on genetics. This is what Rabinow called *"biosociality"*. The citizen's genetic "fates" were being eluded as the health care diagnostic tools focused on prevention and risk factor analyses, instead of the direct clinical treatment of the past (Petryna, 2011:36).

This governmental biopolitical model is a useful tool in the understanding of Soviet and post-Soviet management of Chernobyl environmental crisis and its social and scientific settings. In both cases, the main concern of the authorities was to predict and learn about human bodies and the behaviors of individuals, together with creating non-knowledgeable and unpredictable spaces (Petryna, 2011:34). The soviet medical statistics were deemed state secrets. This practice caused uncertainty to people on whether they were ill or healthy. The aforementioned uncertainty led to the reconsidering of the previous measures, which lost their former meaning and validity. New biological definitions emerged, intentionally or not, while human bodies with several health symptoms were considered to be ill or not. The medical statistics and

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[36] Paul Rabinow (1944-2021) was an emeritus Berkeley professor of anthropology and director of anthropology to the Contemporary research laboratory. His known for his commentary on the Foucault's works (https://michel-foucault.com/2021/04/12/paul-rabinow-1944-2021/).

diagnosis were disputable. As of international experts, the aftermath of Chernobyl was 31 deaths, while as to the local experts, the number of deaths was hundreds of thousands. Although the governments sought to increase predictability and knowledge to increase welfare and operate the state, the citizens faced random measures on science, medical categories, and compensation (Petryna, 2011:34-35). The contaminated territories -that were characterized as such following radiation safety legislation- one day expanded and the next was safe again. Furthermore, official maps on contaminated areas were not provided, thus some rural populations have been resettled more than once (many of them have been resettled and after a while returned to the place they have been resettled from). Therefore, uncertainty and unknowability characterized citizens' everyday lives. Under these circumstances, the aquirment of biological citizenship was a struggle among uncertain and unknown social, scientific and legal data (ibid: 35).

There are three main points of this reformation of biopower, which are useful in understanding the Chernobyl's aftermath. Firstly, there has been a change in the way that the linkages between identity and biology were being made. The former connections of race and ethnicity have been replaced by the "new" biological identities, that became the central criterium in the present formations of citizenship. Secondly, the aforementioned transformations affected the understanding of claims on health that were addressed to the scientific, economic, and political sectors. Lastly, as pain and suffering were being rationalized and instrumentalized -to some extent- they obtained new meaning, values, and dynamics and thus, reshaped social behaviors, social, health and insurance policies, as well as scientific research and its funding (ibid: 36-37). These dynamics of suffering affected also the discussions on the process of pathogenesis which became a socially constructed sector. The construction of pathologies, except for formulating new biomedical circumstances, leads to the legislation of new social and medical policies that respond to social problems, which can produce new health-threatening forms of violence (ibid: 37-38).

The Chernobyl catastrophe, except for bringing new power formations, also contributed to the formation of "counter politics". Citizens were inventing symptoms, measures, and numbers in themselves -in other words, they were inventing illnesses as an outcome of radiation exposure- to exploit these politics, secure economic and social entitlements of benefits for themselves, and thus, limit further assaults on their well-being (Petryna, 2011:38-39). Furthermore, claims on Chernobyl-related damages,

provided new interdependent practices on scientific, national, and economic development, while the citizens' biology resulted being a political and governmental tool (ibid: 42-43).

If persons believe, then their agreement is presupposed. In the society of the Soviet Union believing half-truths was an important practice in the everyday lives of citizens. The practice of speaking half-truths through the power class of *"Nomenklatura"* characterized the social organization of the Soviet Union, which together with the system of horizontal surveillance, guaranteed the prevalence of the collective and the punishment of the disloyal. As the socialist years passed, the practice of pretending to be loyal was not aimed at the protection of the collective but at the subversion of the surveillance mechanisms (eg a soviet scientist who distributed iodine tablets to children at the same time that she should behave like radiation never existed and so on). According to Michael Taussig[37] "knowing what not to know" defines public secret, while he argued that as *"knowledge is power, secrecy and illusion serves the social contract"* (Petryna, 2011:90-91).

In general, socialist societies intended to guarantee a minimum living standard for their citizens. Provide social system protection, lower living costs, guarantee free state education, health, pensions, and some food subsidies. As the health sector has been lessened or privatized, basic health needs remain unaddressed. However, "illness" provided some social protection against unemployment and social severeness. Therefore, to avoid state abandonment and preserve ties with the state, people preferred to convert themselves from soviet citizens to *"biological citizens"* (Petryna,2011: 107). Moreover, those who preferred to reside permanently in the zone were entitled to the "sufferer" status and this status improved their citizen rights (ibid: 109).

The Exclusion zone, on the one hand, portrayed the informal economic and capitalistic trajectories of Soviet society and on the other hand the micromanagement of citizens' impoverishment and a sick sociality characterizing their everyday lives. As the workers in the Zone were paid two-thirds of all Chernobyl allowances with bonuses in their wages and as they realized that had few chances of economic survival working outside the Zone, they preferred to put their health and lives at risk, work in the

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[37] Michael Taussig is an anthropologist, currently professor at Columbia University and European Graduate school in Switzerland. He is known for his provocative style and ethnographic studies. He has numerous publications in medical anthropology (https://ccct.law.columbia.edu/people/michael-t-taussig).

Exclusion Zone and obtain those maintained allowances and privileges. Furthermore, they thought that it was difficult to be hired due to their working past in the Zone. Therefore, the state was deemed to be its protector in two ways. By providing allowances and wage bonuses, the state protected the bodies against their exposures during their work or their residence and the market effects (ibid: 114-115).

Other large-scale man-made technological disasters (e.g. chemical disaster in Bhopal, the nuclear bomb in Nagasaki, and so on), generated several problems to persons that managed to survive. Many were caught by bureaucracy to prove their damage or they were at risk to be accused as non-legitimated under legal or medical contexts. This suffering, caused by the legal and state structures, provides also the authorities' logic. Furthermore, the Chernobyl case was different from other disasters in its duration, variability, and a number of affected citizens. It was characterized by the continuance of its effects, which, subsequently, were difficult to control or record, thus conceptualizing the end of its aftermath was also difficult (ibid: 238).

After the dissolution of the Soviet Union, successor states -in political, economic, and scientific contexts-, undertook the crises' aftermath and subsequent commitments, resulting in human tolls and ethical differences. With the lens of each state, these processes varied, and this variability revealed on the one hand the political nature of science and on the other hand the extent of the political and scientific aftermaths' management and its effects on lived experiences. These state processes disrupted family lives, produced feelings of insecurity and injustice, reshaped personal, social, and political relations, and revealed the dimensions of the health fabric (ibid: 238-239).

The explosion in the nuclear plant of Chernobyl could be deemed as a starting point for the future. It was the first time that humanity had to deal with such an extreme nuclear catastrophe that affected the whole planet. The Soviet authorities were not prepared to face such a unique catastrophe. In the first phase, even if they supported that they were prepared to face nuclear war, they did not know how to manage the situation. At last, their management was inadequate, they took half-meters. The radioactive dust was already spread.

The radioactive contamination is hidden. Is not seen, not smelled, nor tasted. It travels with the wind, with the water, it is on the ground, and with the food. It affects the flora and fauna of the planet. It destructs space, time, culture, citizenship, the community, the environment, the bodies, social balances, and politics.

Like global warming, climate change, and every large-scale environmental crisis, it may affect the planet on a global level. Under these circumstances, migrations could not offer a permanent solution. The planet will keep on warming, transforming habitable places into unhabitable. In the same way, the radioactive dust will keep on traveling, transforming a safe area into contaminated, transforming food into radioactive waste. In case of a reoccurrence of such an accident, or if "the button is pushed", the costs will be immeasurable for the whole of humanity and the environment. If the radioactive degradation is massive or if climate change and overwarming of the planet turn to be a general concept of our lives, there will be no place to migrate and hide permanently. Nature and the environment could not provide shelter. The human-environment relationship will be permanently destructed. Those who will survive will have to consume contaminated food and water, they will have to deal with new severe diseases, new biopolitics, or maybe no politics at all. No one could imagine this picture of the future.

Migration is often attributed to environmental disasters. This pairing, however, is not new and has likely existed since the dawn of humanity, as shown by historical records. However, although environmental disasters and migration appear to have increased, the reactions are not well documented and the implications are not yet fully understood. As the world warms, this will become increasingly important. Understanding the immediate effects and potential response mechanisms is crucial for mitigating crisis fallout. The migration response to a natural disaster, for instance, is nuanced; it can be strong, moderate, or negative.

It was demonstrated that hardships brought on by the environment can prompt people to move away. In addition, moving away from a troubled area could help people recover. The concept of migration as a method of hedging against economic uncertainty was advanced in the New Economics of Labor Migration literature (Taylor, 1999). Migration is one coping mechanism that people use when their vulnerability is increased as a result of a disaster.

The connection between environmental shocks and migration can be explained, in part, through the vulnerability of the population. Studies have shown that the poorest of the poor are often the most negatively impacted by environmental crises (Carter et al., 2007). Furthermore, the disaster-migration relationdhip has differential effects on various demographics. Inequality between the sexes is a problem that affects migration for many other reasons, not just environmental. Evidence from various studies

indicates, for instance, that females are particularly susceptible to the effects of environmental catastrophes. For example, Brown (2007: 74) makes an important point: climate change and the use of migration as a coping mechanism will have specific gendered impacts.

All indicators point to an increase in both the frequency and severity of environmental disasters, with widespread consequences for the natural world. It's possible that the migration process itself can mitigate environmental risks in the home region by relieving population strain on natural resources. Environmental regulations enacted in response to such calamities may also affect migration.

Furthermore, poverty is a serious problem because low-income populations are less likely to have the means to implement adopting solutions. Population, economic inequality, and the quality of leadership are all significant factors within this context. They serve as important intermediaries that can affect the likelihood of migration as a result of environmental crisis and the nature of that migration if it does occur.

There is two-way causation in the environment-migration link, and both directions need to be acknowledged. Environmental disasters lead to huge migrations, which further exacerbate environment overflows worldwide and can result in even further, ongoing migration.

It is a problem for both developing and developed nations to deal with environmental catastrophes. When people experience unexpected hardship, migration can act as a safety net. It is clear from this study why the relationship between environmental crisis and migration is so complex. Two important issues are being underlined. The first has to do with the role of governments and public services in the management of populations in order to cope with environmental calamities. The research paradigm is the second problem. When environmental disasters strike, it is important to know exactly who and where is displaced as well as the appropriate management ways of the affected populations. Subsequently, possible new areas of inquiry, into the relationship between environmental crisis, populations migration and their management, thus into the biopolitics of the future, have been opened as a result.

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