Environmental Security in Russia: A Study of the Far East Federal District

Dissertation Submitted to Jawaharlal Nehru University
in Partial Fulfillment of the Requirements
for the award of the degree of

MASTER OF PHILOSOPHY

MAYALU BORO

Centre for Russian and Central Asian Studies

School of International Studies

JAWAHARLAL NEHRU UNIVERSITY

New Delhi

India

2017

JAWAHARLAL NEHRU UNIVERSITY

Centre for Russian and Central Asian Studies
School of International Studies
New Delhi-110067

Tel.: (O) 191-11-2670 4365
Fax: (191) -11-2671 1586, 2586
Email: crcasjnu@gmail.com

21.07.2017

DECLARATION

I declare that the dissertation entitled "**Environmental Security in Russia: A Study of the Far East Federal District**" submitted by me for the award of the degree of **Master of Philosophy**, Jawaharlal Nehru University, is my own work. The dissertation has not been submitted for any other degree of this University or any other university.

Mayalu Boro

MAYALU BORO 21/07/2017

CERTIFICATE

We recommend that this thesis is placed before the examiners for evaluation.

A. Upadhyay

Prof. Archana Upadhyay
Chairperson, CRCAS

Dr. K.B Usha
Supervisor

Dedicated

to

My Parents

ACKNOWLEDGEMENTS

Firstly, I would like to express my sincere gratitude to my supervisor Dr. K.B Usha for her continuous support, for her patience, motivation, and immense knowledge throughout this study. Her able guidance greatly helped me to complete this Dissertation.

Besides my advisor, I would like to thank the Chairperson, Prof. Archana Upadhyay and all the faculty members of the Centre for Russian and Central Asian Studies (CRCAS, SIS) for their insightful comments and encouragement that helped me to complete my research.

I thank my friends Bhaskar and Priyanka for the stimulating discussions and the constant support they provided me during my research, without their valued suggestions, encouragement and help it would not be possible to complete this research in time.

My sincere thanks go to my friends Nilakhi, Preetima, Eva, Udeshna, Izra, Prerna, Nahid, Bhumika, Anahita and Anuja for their valuable comments, encouragement and significant inputs to my dissertation. I would like to mention Shlok who helped me to edit my dissertation and have shown great concern for the completion of my work. I thank Bikram da and Tonmoyee ba for being the constant guide and support in my life. I am also grateful to Avinash for his continued support and motivation throughout my research.

To Moni (Anuradha), I thank you for all the moral support and laughter you provided me during my M. Phil study.

Last but not the least; I would like to thank my family: my Parents, my brother Deba and my sisters Mona and Poonam for supporting me spiritually throughout my life and while writing this Dissertation.

New Delhi

21 July 2017 *MAYALU BORO*

LIST OF ABBREVIATIONS

RFE	The Russian Far East
USSR	The Union of Soviet Socialist Republic
USA	The United States of America
NATO	The North Atlantic Treaty Organization
AEPI	Army Environmental Policy Institute
ENCOP	The Environment and Conflict Projects
PRIO	The International Peace Research Institute, Oslo
GECHS	Global Environment Change and Human Security
UN	United Nations
UNEP	The United Nations Environment Programme
UK	United Kingdom
NGOs	Non Governmental Organization
GDP	Gross Domestic Product
ASEAN	The Association of Southeast Asian Nations
UV	Ultra Violet
EU	European Union
DDT	Dichlorodiphenyltrichloroethane
HCH	Hexachloro-cyclohexane
SCO	The Shanghai Cooperation Organization
HIV	Human Immunodeficiency Virus Infection
AIDS	Acquired Immune Deficiency Syndrome
RCEP	The Regional Comprehensive Economic Partnership
TPP	The Trans-Pacific Partnership
LNG	Liquefied Natural Gas
ESPO	The Eastern Siberia- Pacific Ocean
ASEZ	Advance special economic zones
EIA	Environmental Impact Assessment

Table of Contents

Chapter I

Introduction: A Theoretical Framework of Environmental Security

Environmental Security in Russia is a major concern at the present times. Russia has taken the environmental security as a grave concern in the context of the country's social and economic development (Dalby, 2002). Important security issues like preservation of biodiversity, water contamination, air pollution, nuclear waste, radioactive contamination etc. has been one of the important environmental issues in Russia since past few decades. One of the major initiatives taken by Russia is that they have decided to observe the year 2017 as the year of environment. The move is designed to attract public attention to environmental problems, maintain ecological diversity and protect the ecological security of the country.

In the recent times, the environment of Russia in particularly the Far East has been degrading due to various 'developmental' projects in the region. Russia is endowed with abundant natural resources that have been commercially exploited for a long time, and the consequences are frightful at present. The ecology is distress by the human activities and has changed the geology; the anthropogenic insecurities which originate from human activities are the primary cause of environmental crises in Russia since the Soviet days and in the post-Soviet era. Environmental quality and management are influenced by the legacy of Soviet economic planning and authoritarian governance, as well as by Russia's post soviet economic recession and the current strategies of economic development.

The discourse on environmental security has been widespread since the disintegration of the Soviet Union. The last century has been mostly occupied with the two major World Wars and the Cold War afterward, therefore, issues like the environmental security has been neglected for an extended period. The environmental security has been linked to the social, economic and political sphere

in the recent times because the consequences of the ecological crises have already conflicted with these areas. Violence and scarcity are the most critical aspects of the environmental crises and security in general. Environment and security are two important phenomena that have come together as a concept to comprehend the environmental crises as one of the components of human security (Cudworth, 2003). At present Russia is trying to develop Far East which has a low level of socio economic development. This region is geographically significant and the area is crucial for the country as an extension to Asia-Pacific. This territory is rich in natural resources therefore, has a great value as a natural resource base. However, given the environmental degradation due to developmental intervention in the nature in the past, care has to be taken about the environmental security. Hence, it is relevant to discuss the environment security in Russia with special reference to Far East Federal District.

Profile of the Problem

Russia at present is facing grave environmental insecurities from anthropogenic causes like preservation of biodiversity, water contamination, air pollution, nuclear waste, erosion, and degradation of land. These insecurities have emerged due to food and water shortages and threatening the health and survival of humans. Over the years not only the climate changes have affected the food chain, but political scenarios also have contributed to the Russian food crises (Alcamo et al., 2006). One of the major initiatives taken by the Russian government is that it is observing 2017 as the year of the "Environment" to attract awareness and attention to the present environmental crises. At the moment, the Far East of Russia (RFE) is facing severe consequences of the environmental degradation, and most of the problems are emerging from the different developmental projects by foreign companies and Russia itself. There have been new developmental initiatives by Putin's administration as the Far East is now considered as the window to the Asia Pacific countries and therefore, some agreements and joint initiatives have been signed by Russia and the eastern countries to meet the economic and national interest. The Far East is also low at socio-economic

development due to its poor connectivity with Moscow. The Far East is also one of the geopolitically significant regions due to its proximity to Eastern countries like China, Japan, and Korea. The interest in Asia-Pacific began since the period of Soviet Union because of the greater roles of both China and Japan in contemporary international politics. The emerging power of Asia-Pacific actors such as China and Japan invariably complicates superpower political and military calculations and is indicative of the extent to which the international system has evolved since the era of bipolarity (Buszynski, 1988).

The environmental policies of Russia have been influenced by the Soviet governance and also by the constant competition with the West, in particular with the USA during the Cold War era. The laws and policies regarding environmental issues were not very favorable concerning protection and preservation of the environment in the earlier times, however, at present, effective legislation and regulations have been adopted to conserve the environment. The Russian Far East during the late Soviet period had stronger economic ties with the European Russia, but it had insufficient links to the East Asian countries. Its trade with European Russia and the former USSR was subsidized through artificially low transport rates. Moscow supported the Russian Far East regarding finances, the military bases in the RFE were important for Russia in strategic terms and hence was maintained by Moscow. The ordinary workers who worked as laborers in the RFE region also were supported by Moscow and received bonuses for working there. The collapse of the Soviet Union had an enormous impact on the subsidies provided to the Russian Far East region. The economic condition of the RFE region was already lower than the rest of the Russia, and after the collapse of the USSR, the economic impact was even higher than that of Russia as a whole (Bagot and Wilson, 2014). Countries in the Far East are interested in economic ties with Russia due to its abundant natural resources and proximity. For example, North Korea was considered for energy a substitute, which was one of the major economic initiatives by Russia and also Countries like South Korea, Japan, and China plays a significant role in the geopolitics of the Far East.

Beijing supports efforts to expand Chinese economic ties with Russia, which it sees as an essential foundation for their "strategic partnership." At present the term strategic partnership is being used to describe the improved relationship between China and Russia that has emerged in the post-Cold War period (Hays, 2008). Despite some underlying tensions, Russia and China have been drawn together by some shared interests, including a desire to counter the growth of U.S. power, to stem the rise of Islamic fundamentalism in Central Asia and to cooperate to resolve the Korean situation and other Asian regional problems.

The Far East of Russia has abundant resources and mostly untouched by the world and is thinly populated. While the region is valuable for Russia regarding resources; the region has also always been challenging for Russia. The Far East borders with two most important countries in the east Japan and China, with whom Russia always had unstable political relations and close by is the unpredictable North and South Korea. However, Gorbachev during the Soviet period tried to improve the ties with China and Japan, as a way of ensuring a favorable balance of power in the region by undermining their relationships with the United States (Buszynski, 1988). Moscow being thousands of miles away is the capital city and the decision maker. The distance between the Far East and Moscow has played a huge role in the maintenance of a streak of independence from the central government and has never been easy to rule the region. Mostly the region is mountainous and cold, it is less populated and one of the least populated parts of the world, just below uninhabited Mongolia. Defending and Managing the region, therefore, has always been a challenge for the authorities (Bagot and Wilson, 2014).

Despite being in a geopolitically important region, the Far East has been underdeveloped for many years. However, there are two areas - energy development and trans-shipment through Russian territory which is some of the new developmental initiatives to attract large-scale foreign investment in the region. After the Globalization and Neoliberalism, East Asia's demand for energy is expected to grow

shortly. Oil and natural gas could meet part of increasing East Asian demand from the Sakhalin continental shelf. Consortia comprising U.S., Japanese and Russian firms have begun the first two phases of a project to develop Sakhalin reserve. The disintegration of the Soviet Union had bought an enormous economic downfall to Russia; therefore the economic liberalization was an important step to revive the economy of the country. Some of the regions in the Far East such as the Sakhalin which is rich in natural resources have experienced an oil expansion, and the extensive petroleum exploration was carried out along with mining by big multinational oil companies during the economic liberalization period (Dalby, 2002). Multilateral consortia are being formed to bid on the next three phases of this project. These projects are expected to develop and connect the Far East with the mainland Russia in future if successful. However, the primary concern was to protect the indigenous people of the region who have been living in the Far East since years. These are the first sections of the individuals who are affected by the developmental projects, and therefore, the Far East of Russia is cultural, geologically and environmentally vulnerable.

The focus on the Far East has been shifted in the recent times due to many events. Environmental crisis and the geopolitical significance are the major issues which the Far East is dealing with in the recent times. The focus on the Asia-Pacific policy by Russia in the recent times has increased due to many factors such as to open the window to the Eastern countries for export and development initiatives. Russia and China for example, are involved in political and economic rapprochement in a number of fields such as energy, arms production, trade in national currencies and strategic projects in transport and supporting infrastructure (Malle, 2017). The Far East of Russia shares borders with major Eastern countries like China, Japan, Korea and Alaska (USA) and therefore, Russia feels insecure that these countries would gain control over the natural resources. Although the economic trades with most of these countries are carried since a long time but was neglected due to its distance from Moscow. Comprising almost one-third of Russia's territory, the Far East district is

home to major natural resource deposits, and essential to maintaining increasingly valuable Asian trade routes, the Far East Federal District is a strategically significant asset for Russia (Wilson and Bagot, 2014).

The attitudes of the Moscow integrationists towards the Asia-Pacific have been, in essence, projections of domestic needs in a way which places economic aid and assistance in first place on the foreign policy agenda. Within this context, the Russian relationships with Japan and South Korea have assumed a new significance, and for the Moscow "integrationists" Asia-Pacific policy has been essentially a means of drawing economic support from those two countries (Buszynski, 1992-93). Despite the region's prosperity, over half the population lives in poverty due to underdevelopment. Transport infrastructure is almost absent or of the poor condition over much of its territory. The Trans-Siberian Railroad which connects the Far East and Moscow and the Baikal-Amur Mainline, the area's only major rail services, cover only an insignificant part of the southern-most territory (Bagot and Wilson, 2014).

The Russian Far East has historically served as the catalyst for trade with the Far Eastern nations of China, the Koreas, and Japan. China is a significant partner of Russia; regarding the trading partnership, it is second only to the European Union and Japan being fifth in trading business, and most cars and electronics are the imported commodities from these countries. The Russian government is prioritizing trade relations with the Far Eastern nations and has managed to maintain several valuable partnerships. South Korea and Russia are collaborating on the construction of an industrial complex in Russia's Nakhodka Free Economic Area and on the development of gas fields around Irkutsk. There were also ambitious plans to connect the Trans-Siberian to Korea's rail network, facilitating the transport of South Korean exports to Europe. This trading had helped the economy of the Far East and Siberia as there was also increase in production of goods due to the connectivity (Grajdanzev, 1941). However, this would require an entirely reconnected inter-Korean transport system;

the tension due to the Korean War the relationship is still actually unusable due to continued prolonged tensions.

Russia might not be the super power in the present times but its economy is huge, and it is one of the most important countries of the world. The vast land mass and the natural resources available in the Far Eastern part make Russia a critical country concerning geopolitics. If Russia wants to seek a greater role and place in the international community, it has to strengthen its territory especially in the Far East of the country, and it will also allow it to connect with the growing Asian markets. The development of the Russian Far East is practical and logical for Russia because of the market potential in the Asia-Pacific and the possible trade with the Russian Far East. As Russia also seeks peace and development in the Russian Far East, greater economic ties will encourage such initiatives, and territorial proximity with few important Asian countries have made RFE inevitably an important region to focus. One of the challenges that Russia faces is the distance from Moscow and to maintain the size of its land mass which is necessary for Russia's long term goal (Bagot and Wilson, 2014). Therefore, due to this complex nature of the area regarding trade, development, military, border, etc. The Far East is an important region to study and looked. Different types of security concern have come up, and environmental security is an equally important aspect to be considered.

Theoretical Framework

In the last half-century, the term “security” was mostly a matter of states and their military activities which were mainly applied to the “security” of borders and institutions from outside threats. Mostly, the emphasis was on the external threats that came from other countries, primarily military threats. The concept of security is inherently about the risk and vulnerability (Barnett, 2001). Although some analyst has mentioned that even if this definition is simple, it is valid and considers military threats to security are easily identifiable and carry very extreme consequences and

danger to the people. However, in contrast, the nonmilitary threats such as poverty, hunger, social vulnerability, or ecological resiliency are not considered as a real threat to the world (Najam, 2003). After the end of the Cold War, there was an atmosphere of perplexity in the world because of the demise of the USSR. The world was also confused as to whom they should consider as a threat after the collapse of the communist bloc. The Soviet Union was considered as the ultimate threat to the west; however, after the disintegration, this notion was crushed. New threats such as environmental security, civil wars, the rise of the Islamic fundamentalist, etc. have occupied the last few decades. New understandings of security have come up with the emergence of these threats which are non-military and trans-national.

When we talk about environmental security firstly, we try to explain what the meaning of 'security' is. According to many scholars, it presupposes that some other poses a danger and in this context, it means danger to humans and nonhumans both. The concept of environmental security became more popular after the end Cold War period. However, it is challenging to define environmental security as the idea of Security has no meaning of its own. There might be no scholarly consensus on one definition of security; it is a dynamic concept. Security could be understood as the protection from the unwanted threats to life and survival. The definition could vary according to the situation and location. The definition of "security" is very vague, and the concept of the environmental security is a contested idea in the present times. Specifically, security is a derivative term in that it presupposes something to be scared (Shearer and Liotta, 2011).

Both the ideas, Environment and Security have been used together because the occurrence has affected the humanity ever since the developmental initiatives were initiated. It is a much-contested perception, and people often use it casually for 'sustainable development'. Sustainable development is the form of development where nature and the natives are not displaced or disturbed. It has to be in harmony with the environment and the humans. Therefore, using 'environmental security'

synonymously with sustainable development is not ideal in principle as the two concepts have different sets of understanding.

The idea of "security" is yet in the process of addressing the Environmental issues as pressing. With security comes the idea of 'peace' and 'violence.' Peace just like environmental security has no one visible way to define it. There would be different types of complementary ideas that would define peace of which environmental security might be one of it. To attain peace, there has to be environmental security as it is known that violence can occur from ecological crises. And therefore, when we talk about environmental security as an idea we come across a host of other complementary ideas that contribute to defining the concept. (Barnett, 2001) speaks of the seven types of environmental security agenda - efforts to redefine security; theories about environmental factors in violent conflicts; the environmental security of the nation; the linkages between the military and the environmental security issues; the environmental security agenda; the environmental security of the people; and the issue of securitization.

Environmental security is linked to many other complementary ideas, and one of the ideas is the notion of *in*security, this is a largely unexplored idea that environmental security deals. Environmental security is the process of minimizing environmental vulnerability (Barnett, 2001; Brauch, 2005). Due to anthropogenic activities, humans are vulnerable concerning life and survival and this sense of vulnerability is known as insecurity. The protection of the weak is implicitly called "security" (Brauch, 2005). Environmental instability has created other kinds of conflicts in the world. Interstate conflicts for water sharing, water pollution, and air pollution, etc are some of the major conflicts that have emerged from ecological crises. Major insecurities that we are facing are land degradation, water contamination, deforestation; radiations, air pollution, desertification, etc. have affected human and non-humans equally. The food and water crises are one of the main concerned areas that have to

be looked into when we talk about environmental insecurities because it has affected the food chain in nature.

There are several definitions given by different scholars to define what environmental security is. Today, the environmental security debate flourishes not only among scientists but also social and political science students have started to include in the discourses of sustainable development and politics (AEPI, 2000). These scholars redefine security, define environmental security and suggest political and social responses to ecological disaster (Barnett, 2001). They formulate policies and debates in the international conferences and summits and also have come to a scholarly consensus on what environmental security is. Although there is no single definition of environmental security, however, the basic understanding of environmental security that is agreed upon by scholars and scientist is that it is a new nonmilitary threat to the world which is the cause of conflicts in many regions around the world.

Few countries have an official definition of environmental security that has been followed as a conventional understanding of what environmental security is. Some countries like Russian Federation, the United States of America, and India, etc. have defined environment security and these definitions are mostly military definition and lack scientific understanding. However, these definitions are the contribution to the development of the study on environmental security. Environmental security can affect humankind and its institutions and organizations anywhere and at any period. Environmental security is considered in two relevant fields- International Relations and International Development. The concept of Human Security has emerged in the post-Soviet Russia and some of its components like “Environmental Security” became popular after the policy of glasnost and perestroika. Human security does not limit itself to defining its goal by what it aims to eradicate, and it rethinks peace beyond the traditional understanding as ‘Non-War' (Tadjbakhsh and Chenoy, 2007).

The prominent international organizations have not created a definition to guide policy. However, there has little mention in the documents of the United Nations. For example, the United Nations Environment Program and the World Health Organization do not have definitions for environmental security and the United Nations Development Program only refers to it briefly in its 1994 annual report on human development. "Environmental threats countries are facing are a combination of the degradation of local ecosystems and that of the global system (Human Development Report, 1994). These comprise threats to environmental security." Some scholars have come up with the definitions of environmental security with literature search and some research. Some of the definitions are as follows.

Army Environmental Policy Institute (AEPI) study has defined environmental security as: “The relative public safety from environmental dangers caused by natural or human processes due to ignorance, accident, mismanagement or design and originating within or across national borders” (AEPI, 2000: 15). The above definition of Environmental Security has been considered balanced, and the factors responsible for the degradation of the environment have been addressed in this definition. It says that environmental security should provide a relative public safety from environmental dangers; here it says that humans have faced a threat from the environment which is anthropogenic due to ignorance or accident, these kinds of threats do not have boundaries and have the potential to create insecurity among the people.

In comparison with other securities, the environmental security is an important aspect of human lives. Along with external military threats, the emphasis on environmental security has become of the priorities in the recent times. The definitions of the environmental security have to be broad in the sense that it includes all the threats external or internal or even natural calamity. The insecurities can be caused by many factors like human-induced disasters, for example,

atmospheric pollutants, land degradation, depletion of forest and timber, water scarcity, etc. which are mostly due to ignorance and mismanagement by the authorities and people. However, the definition lacks scientific understanding of the environmental crises; it does not define the scientific consequences of the environmental degradation like resource depletion or species extinction and these problems are aggravated due to population explosions, military and technological proliferation. The health and economic cost of the environmental crisis are only a part of the many consequences that emerge from ecological crises. Therefore, to define the environmental security and emergencies, it should be broader in scientific, social, and theoretical understandings of us as creatures of nature and dependent on ecosystems in a life cycle. One more definition as given by The Millennium Project states that:

> Environmental security is the state of human-environment dynamics that includes restoration of the environment damaged by military actions, and amelioration of resource scarcities, environmental degradation, and biological threats that could lead to social disorder and conflict (The Millennium Project AC/UNU, 1998: 15).

The above definition is a straightforward explanation that has been narrowed down to military actions and amelioration of resource scarcities. Many destructive consequences due to the degradation of the environment are linked to social problems too. There is much insecurity that came up due to the environmental degradation. Insecurities are nothing but the vulnerability of people to the effects of the deterioration of the environment. The poor water and air quality, deforestation, climate change, radiation, etc. are some of the insecurities that the humans are dealing. The definition further talks about the restoration of the environment; however, some of the damages are beyond repair, and an alternative solution should be designed. Combating environmental crises is not only about the restoration of the damaged environment, but also to preserve it for the future generations. Any definition of the environment should also focus on regulations and laws concerning the protection of the environment.

Coming to an additional definition by the Environmental Security Study by the Millennium Project states that: “Environmental security is the cycling of natural resources to products, to wastes, to natural resources in ways that promote social stability” (The Millennium Project AC/UNU, 1998: 16). The above definition lacks a holistic understanding of what environmental security is, it has excluded many important aspects such as the impact of ecology, society, policies, and debates etc. show that this definition is unfinished and partial. Cycling of natural resources is a natural process, however, at present, this "cycle" is affected by the environmental crises. For example, the water cycle cleans the water and delivers fresh water to the living organisms; it not only promotes social stability but maintains a balance in nature. To promote social stability it is not only the environment that is responsible, but proper execution of the regulations and policies by the government is also equally necessary (Brundtland, 2012).The environment only provides us with resources but to conserve it is our duty and responsibility. Therefore, this definition failed to address many important elements that are required to understand environmental security in a broader sense.

There would be many other definitions given by many scholars on environmental security and most of the definitions on “Environmental Security” are presented by the environmental scientists who construct theories or narratives about the problems connected to the environment (Hannigan, 1995; Cudworth 2005). However, most of the definitions try to include most of the influences responsible for environmental degradation but still, most of the definitions lack scientific understanding, and most of the definitions would omit and keep out the social implications of environmental crises. Some scholars also began to wonder about the Malthusian assumptions structuring the debate on scarcity and then on the debate on environment and development. In the 1990s both Thomas Homer-Dixon “Toronto school” and Gunther Baechler’s ENCOP project, in their respective understanding suggested that conflicts in society are related to environmental factors. However, it might not be that simple, institutional and political factors were critical to understanding when

environmental difficulties might lead to blatant violence. However, in the current decade, while discussing the environmental security, the whole debate got turned upside down because when the "greed not grievances" arguments suggested that in fact sometimes "abundance" rather scarcity would be the cause of conflicts, what is called as "new wars" of the 1990s (Dalby, 2007).

The control over resources and the violence over oil possessions in many places, the destruction of forest to support insurgencies, etc. are a different set of circumstances related to conflicts. Therefore, we can see here that environmental security is partly eclipsed by the debate of global resource issues, and petroleum politics in particular. The environment, in particular, has returned to the discourse on politics after it has been understood that oil economy has certainly hampered the climate and changing the planet's air that will affect the poor people from the global South, vulnerable to the environmental disasters. It has given rise to the new era which is called "Anthropocene." Here, Anthropocene means the geological issues that have originated from the human activities and have changed the environment (Dalby, 2007).

In 1994, Robert Kaplan gained much of the attention due to his predictions of "coming anarchy" which was based on the assumptions that shortages of resources will create a chaotic situation in future (Kaplan, 1994; Kaplan, 2000). Kaplan said that there would be shortages of resources in the near time due to the global population. He suggested that the population would grow faster than the ability of agricultural growth to sustain the population. This is a traditional Malthusian theory, and Kaplan's theory is based on it. Kaplan's argument also fits into the larger debate that how the shortage of resources would lead to conflicts, the so-called "neo-Malthusian" arguments that are the cause of the environmental security literature. According to Dalby, there are researchers who argue that the environment-security debate has evolved in three stages. First, the call for a broader understanding of security other than the one used in the Cold War period. Second, theorist tried to

specify links between environment and insecurities to establish a research study. The third stage is to search for an empirical verification of the initial assumptions (Dalby2012; Dalby 2002).

Review of Literature

The study uses four strands of literature. First is about understanding environment security and its various dimensions, second is Soviet legacy and third, the environmental issues in Russia, fourth deals with specificity of environmental issues in Far East Federal District.[1] The issues concerning the environmental security are taken up by various authors at various points of time highlighting their domain of interest and concern. Simon Dalby (2009); Jon Barnett (2001); Thomas Homer-Dixon (1999) have critically tried to explain the meaning of environmental security and its dimensions. Dalby (2009) provides an open and engaging account of the challenges we face in responding to security and environmental change. He argues in his book that the root of the understanding of the concepts of security is important because it outlines the modern thinking about securitization which involves the invoking of threats into the minds. He further argues that the ecological change is directly or indirectly related to the world economic system. Jon Barnett (2001) presents a critical discussion of the new idea of environmental security. He tried to analyze a link between environmental degradation and national security. He critically describes that the environmental security is ultimately driven more by the power of the security makers than by the need to address the environmental issues.

Thomas Homer-Dixon (1999) describes that the human population will explode by 2025 and the rapid economic growth will put pressure on the resources to meet the needs. He critically analyses the fact that there would be huge scarcities of renewable natural resources such as cropland, fresh water and forest. Robert Falkner (2013) presents a solid and inclusive overview of global policy on climate and the

[1] This region comprised of nine federal subjects. In some studies the term Far Eastern Federal District is also used for Russia's Far East.

environment. This book Explores the environmental challenges we currently face, and the concepts and approaches to solving these issues. The authors further describe the importance of interdisciplinary research team to study and analyze the global environmental issues and look for solutions.

Detraz (2016) explores the understanding why gender matters to the environment. She examines the contemporary debates around population, consumption and security to understand how gender helps us to make a better understanding of the environmental issues around the world. Similarly, Buckingham (2000) describes the key issues in the area of gender and environment. It critically examines the different kinds of impacts of environmental issues on women and men. The text covers many social issues such as conception, giving birth, rights etc.

The second strand of literature looks at the Soviet legacy of environment in Russia. The important environment insecurities discussed by scholars include various anthropogenic impacts, change in water chemistry, water contamination, desiccation of water resources, desertification, land degradation, deforestation, decline of bio-diversity, health insecurities, air pollution, climate change, radio-active contamination etc (Josephson 2013; Kibel 1994; Alcamo et al. 2007; Bowers 1993; Bozugu 2011; Brown 2016 etc).

The author Paul R. Josephson in his edited book *The Environmental History of Russia* describes in details the Soviet legacy of environmental security. Basically the book is a description of the impact that state economic development programs had on the environment. The authors emphasized the importance of environmental impact and past/future cooperation with Russia and the CIS in dealing with climate change. The book is a long account of the environmental struggle the natives deal in the RFE due to pollution and environmental degradation. The Soviet legacy of environmental security also finds expression in various article and write-ups by (Bower 1993; Brain 2010a; Lukin 2007; Newell and Henry 2016; Robinson1998; Ridgeway 1990) to

name a few, have dealt with the issues of Soviet legacy on environmental security and degradation.

The third strand of literature looks at the environmental issues in Russia. The scholars who have attempted to examine the various environmental issues in Russia are (Feldman and Blokov 2009; Gianessi and Williams 2011; Kalikhman 2012; Maloney-Dunn 1993; Brauch 2003; Jacques 2011 etc). Thomson (2008) and Whish-Wilson (2002) focus on the degradation of the lake Baikal and the Aral Sea and its consequences on the health and economy of the people in the area.

The fourth strand of literature looks at the environmental issues in the Russian Far East region. Sue Davis (2003) gives an elaborative account of the Far East region. The book provides a very broad introduction to the Far Eastern region of Russia, covering the history, politics, administration, foreign policy, culture, economy and military issues. It also examines the ten provinces and gives a full account of the economy and military interest in the region. Various other works on the Russian Far East depicting the environmental problems in the region can be found in (Novakovsky 1922; Poelzer and Fondahl 1997; Schindler 1994; Vandergert, P. and Josh Newell 2003; Wishnick 2005; Aven 2013 etc).

Stephen (1996) presents a comprehensive history of the region and tries to understand the Russian Far East as more vibrant and cosmopolitan than the conventional picture. The book explores the various subjects on the Far East region from political, diplomatic, economic, geographical, social, and cultural evidence. The book reveals the diversity and the volatility of the Far Eastern society and its importance in the Eastern part of the world. Also the information on the Siberia and the Far East based on surveys and research, this book is relevant for the study on the Far Eastern History, politics, economy and culture. Thornton and Zeigler (2002) broadly analyses the Far East region, during the Soviet era and since, the book also covers the economic, social, and political conditions of the region and the role of the region in the foreign and security policy of Russia and other regional states. The

book presents a broad study of the relationship of the RFE with the Asian countries. The authors in the concluding part address the critical questions of how to achieve a stable political environment in the Russian Far East.

Focus of the study

The study seeks to examine the current environmental insecurity in Russia in general and the Far Eastern Federal District in particular. The study focuses on the following points:

- The situation of the environmental change and security in Russia.
- The impact of Soviet legacy and anthropogenic developmental activities on environment.
- The geopolitical significance of the Far Eastern region and
- Impact of economic development programmes in Far East Federal district on environment.
- The impact of the environmental degradation on socio-economic situation and human health in Far East Federal district
- The state policies and measures to combat the issue of environmental insecurities.

Research Questions

Against the backdrop of the review of literature the study tries to answer the following research questions.

- Why environmental security is important to Russia?
- What are the Impacts of environmental degradation on human health and socio economic development?
- What are the mechanisms involved by Russian government in combating environmental insecurities?
- What is the significance of the Far East of Russia and its implications on developmental initiatives in environment?

Hypotheses

The study follows the following hypotheses:

- Environmental insecurities in Russia are the result of anthropogenic insecurities in nature during the soviet and post-soviet periods.
- Since Russia is currently trying to focus on the development of Far East as part of its Asia-pacific policy, given the environmental issues in this region, the new developmental initiatives may aggravate already existing insecurities of Far East therefore, mechanisms for addressing the environmental impacts is needed.

Research Methodology

The study is analytical in nature and explores the causes and consequences of environmental change for human and ecological security in Russia, by taking the Russian Far East as a case in point. The study employs theoretical insights from various disciplines such as sociology, environmental studies, political science, international studies, etc for analyzing the issues of ecological degradation, developmental initiatives and geopolitics. The study used primary and secondary sources of literature in terms of books, journals, newspaper articles, magazines, records of history, government documents etc.

Structure of the Study

The study is divided into five chapters. The first chapter is the introduction which gives a brief overview of the research, by incorporating literature review, scope and rational of the study, research questions and the methodologies adopted. The second chapter explores the impact of environmental security in Russia. The ecological degradation in Russia is a result of the environmental legacy of the Soviet Union, therefore, the impacts of the environmental crisis on the health and economy of the

Russian people has been analyzed. The third chapter focuses on the environmental insecurities of the Russian Far East along its significance in the geopolitical field. This chapter also looks into the many developmental initiatives taken by the government to develop the Russian Far East. Coming to the fourth chapter, the mechanisms to combat the environmental security issues has been the primary concern. Coming to the later part of the chapter, the laws and regulations concerning the environment has been focused in the study. The concluding chapter gives a brief account of the chapters and its findings. It will outline the concept of environmental security and the problems faced by the Russian Far East due to the environmental crisis.

Chapter II

Impact of Soviet Legacy on Environmental Security in Russia and Contemporary Challenges

Russia is the richest country in the world concerning natural resources and biodiversity. Most of the natural reserves such as oil, gas, and coal which are often located in the cold regions such as Siberia and the Far East of Russia are most in abundant. However, the Tsarist and the Soviet governments mismanaged the environment mainly because it was exploited in a haphazard manner and due to insufficient measures to prevent such ecological disasters. The collapse of the Soviet Union exposed grave environmental problems in the ex-Soviet republic. They had to cope with the toxic residue the Cold War left behind. There have reports that the real extent of ecological destruction caused by the 20th century Soviet military and industrial policies has been disclosed as deplorable in effect and staggering in scales (Maloney-Dunn, 1993).

The first instance of failure to preserve the environment was the ignorance of the modern technology by the regime in the early centuries. Due to the involvement in the World Wars, in particular with Japan at the beginning of the 20th century, the environment was disregarded for an extended period. However, in the later period, the Bolsheviks adopted the scientific methods to conserve resources and initiated projects to develop water resources and to construct and built hydroelectric power stations and also to preserve the arable lands.

By January 1918 the Bolsheviks had abolished the land committees local bureaucracies established by the Provisional Government and invested with broad authorities, including the power to reject logging plans and in May 1918 solidified central control by issuing a new codex, the Basic Law on Forests (Brain, 2010).This was also the period when there was the development of the nature preserve project to protect the fertile lands which were known as “Zapovednik” (WWF-Russia, 2008).

Eventually, this project was at risk after the election of Stalin as the head of the government. He adopted rapid economic policies and military developments to cope with the military threats and the economic stagnation. These policies accelerated the commercial use of the natural resources and had put the Soviet Union and the environment at risk for years to come (Josephson et.al, 2013).

During the late imperial period, the environmental thinking was primarily associated with understanding the existing forestry, agriculture and fisheries practices. Not only understanding but also to make it better with new types of equipment and methods. The scientific communities in the Soviet Union were self-aware of the fact that natural resources should be managed better for the humanity. Around 1917, there were certain establishments for scientific management of forest, water, and fisheries, etc. there was also the establishment of training institutes to train for better management of the ecology. Only after the revolution, there was the disruption of the environmental activities, and the new Bolsheviks tried to control the economy. This was a period of War Communism where the labour was militarized, and capital was controlled. The method for forest management during the War Communism was aggressive clear cutting coupled with promises to remedy the damage by planting new forests by hand (Brain, 2010).Although economy at this period deteriorated but recovered around the 1920s after the introduction of new economic policies.

In spite of all these turmoil, the scientists were able to set up environmental based research institutes to study and expand the network of nature preserves. After the Stalin took over the power in 1928, the focus on the rapid industrialization and collectivization of agriculture which have long term economic and environmental impacts were increased. The human and environmental costs of such policies are still relevant in the present times. Stalin not only wanted to fulfill the military and self-sufficiency requirements but also wanted to exploit the extensive natural resources by building dams and reservoirs on all the great rivers (Josephson et.al, 2013).Stalin committed the environmental blunder when he did not rehabilitate the victims of

world war two, instead focused on massive industrialization in the fourth five-year plan in the year 1946-1950. The rush to modernize the Soviet Union under Stalin's tenure was a huge political mistake that had an enormous environmental cost as well. The idea that environment was an obstacle to overcome the road to progress by the communist was an ignorance of nature (Brain, 2010).

Stalin also initiated the projects on irrigation and afforestation, this plan was carried upon to transform the nature and make the Soviet Union a well functioning industrial society; however, the plan failed miserably, and on top of it, Soviet Union was also engaged in the Cold War with the USA. This had huge negative impact on the environment due to the production of nuclear, chemical and biological weapons. Stalin also initiated few policies such as the creation of the Ministry of Forest Management due to the frustration from the underperformance of the forest industry and therefore took control of the entire nation's forest and to ensure the logging rules were followed (Brain, 2010). After the death of Stalin, Khrushchev initiated some reforms like increasing the autonomy of scientific specialist and civic groups, and this gave greater freedom to these groups to reevaluate the environmental security and Soviet economic developments. Khrushchev also strengthened the environmental laws and policies and had increased the fines on factories who would fail to follow them. However, the emphasis on heavy industry never diminished even under Khrushchev's regime, and the quality of life deteriorated.

The operation of Soviet planned economy seems to have paid less attention to the depletion of natural resources due to unsustainable use of resources for development despite the prevalence of several environmental protection laws[2], public

[2]In USSR there were more than 1,000 laws in the field of environmental protection. Some of the most important among those, which were the keystones of environmental protection in the Soviet Union, were Fundamentals of Land Legislation (1968), Fundamentals of Water Legislation (1970), Fundamentals of Mining Legislation (1975), Fundamentals of Forest Legislation (1977), Air Protection Act (1980), and Wildlife Protection and Use Act (1980). Besides these, several articles were included in the Soviet Constitution for protection of natural resources. For instance, Article 18 provided that in the interest of the present and

organizations and environment education (Kolbasov, 1987; Usha, 2016). Free and cheap availability of resources, excessive irrigation of agricultural grounds, excessive use of minerals and energy in industrial production (Fergus 1999: 43) were important characteristics of the Soviet economy, which later produced devastating outcome for the system.The agriculture was under pressure due to faulty policies and program by the government, and the use of chemicals and fertilizers increased in the 1980s to increase the crop outputs. According to study, the total crop area in Russia has been declining since the 1980s because of the combination of factors including reduced government subsidies, soil degradation and decreasing meat production (Alcamo et.al, 2006).

The large scale project to divert the water and develop the Siberian area led to huge cutting down of trees and contributed to "ecocide" (Josephson et.al, 2013). Through the policies of glasnost and perestroika, Gorbachev tried to revive the reformism in the Soviet Union. The environmentalism in the Soviet Union was restored after the Chernobyl accident in 1986. The cost of Soviet economic development was exposed after these policies, and therefore gradually ecology was established as an important aspect of growth and sustainable development.

In the period of the Soviet rule, the government had pursued many policies for development which had overlooked the environmental protection for a long period. These policies had adverse and negative effects on the welfare of the environment and the human health. Some of these policies were promoted dishonestly; people were not made aware of the environmental repercussions, and the authority was

---

future generations, the necessary steps were taken in the USSR to protect and make scientific and rational use of the land, mineral and water resources, and the plant and animal kingdoms; to preserve the purity of air and water; to ensure reproduction of natural wealth; and to improve the human environment. Article 67 provides that citizens of the USSR are obliged to protect nature and conserve its riches. Several public organizations and environment education were also highly encouraged in Soviet Union through legal enactments (Kolbasov 1987; Usha, 2016).

rested at unregulated security apparatus. For example, the 1992 Russian law on environmental protection, already in force, virtually prohibits the importation of foreign radioactive waste products into Russia for either dumping or storage on its territory. While the law on environmental protection forbids the burial and storage of foreign nuclear waste, it does not explicitly prohibits their reprocessing in Russia as long as the by-products i.e. those with lower Radio-activity and a different half-life, are sent out of Russian territory (Maloney-Dunn, 1993).

The environmental issues in Soviet period started around the time when Stalin took charge and tried to establish heavy industries and little interest was paid to environmental risk. Although Stalin did pay some attention to the "so-called" development of Siberia and the Far East of the Soviet Union, it failed miserably concerning environmental protection. There were much large construction programs such as constructing gas pipelines and building new cities. Although they were successful in the building of a new industrial city, it was still a third world country regarding its economy which was struggling due to the expenses of the World War period and the dependent on the sale of the natural resources such as hydrocarbons have been increasing(Gurkov et al., 2014).

The discourses on the protection of the environment in Russia came to notice after the glasnost policy during the Gorbachev period and had exposed many of the information on environmental mismanagement in the late 1980s. Also, some of the major incidents like the Chernobyl in 1986, the Aral Sea disaster and the irradiation issue of North Kazakhstan, etc. had grabbed the attention on the environmental crises. The Aral Sea water crisis in Central Asia was one of the most well-known cases of environmental degradation that generated multiple human insecurities during the Soviet era (Usha, 2016). The Aral Sea was one of the largest inland water bodies in the Soviet Union. The decline of the Aral Sea is also one of the critical reasons for the loss of livelihood in the region; thousands of jobs were lost specially fishing related activities. This turned worst when the Soviet Union declined its

support, and as a result the local economy has been annihilated (Whish-Wilson, 2002).

The sea water was used for cotton cultivation, although the cotton production was high, the repercussion was toxic. It was an initiative by Stalin's irrigation projects, and the project has diverted the waters of rivers that once flowed into the Sea into large cotton spreads. This was one of the greatest flaws of Soviet planning system; the enormous project to irrigate the desert close to Uzbekistan had affected the natural flow of the sea. Although, Uzbekistan became the largest exporter of cotton and this was possible due to the Soviet effort to divert the water and cultivate in the desert area. After all these years of exploitation of the river, it has shrunk by almost 10%.The lands have been used for biological weapons testing, industrial projects, and dumping grounds and for pesticides and the fertilizers that have been exposed to the air and the wind in that area and to the area nearby areas. Economic degradation is not only adverse impact of environmental crises, social and ecological values are also compromised (Panda, 2014).

To increase the production of Cotton, large quantities of fertilizers were used in the fields. It was not only used in Cotton production but other agricultural productions as well. Pesticides such as Organochlorines, dichloro-diphenyl-trichloroethane (DDTs), Hexachlorocyclohexanes compounds (HCH, Lindane), and Toxaphene were considered most harmful when it was used. These chemicals were banned due to its high toxicity level and adverse effect on human health and soil quality. Due to the use of fertilizers and pesticides the level of water salinity has increased and has killed most of the sea fish and native species in the Aral Sea. This is evident from the fact that the commercial fishing catches have fallen from 43,430 metric tons in 1960 to 17, 460 tons in 1970 (Glantz, 1999).

The public debate on environmental security started after the Chernobyl accident which also coincided with Glasnost and Perestroika and therefore, opened up the

discussion on environmentalism. The turning point in the Kremlin's treatment of environmental questions was the Chernobyl nuclear accident in April 1986, an incident that highlighted the persistent Soviet tendency to reveal little or nothing about sensitive environmental concerns, even those having an impact far beyond the frontiers of the USSR (Bowers, 1993).

The Conservation of the environment in Russia has a long history, but in the Soviet Union era, the discourses on environmental issues were suppressed due to lack of awareness and negligence. At times, it was discussed only regarding a scientific or in any non-ideological discussion outline. However, the debate on the 'environment' was different from the West. The Soviet Union believed that the vast resources of its land are inexhaustible, unlike the west, therefore, the urgency to tackle environmental issues The discussion on the environment started in the 1960s; one of the primary debates in the subsequent years was the protection of Lake Baikal, which was becoming extinct and was the most heated debate during the period of perestroika. It was the period when the environmental critique was a vital part of the criticism directed against the Soviet Union regime (Karjalainen and Habeck, 2004). The debate on environment faded as time passed and Putin's Presidency era came. In comparison to the perestroika period and the subsequent period, nowadays in Russia environmental concerns and discussion have faded and has become irrelevant and less politically significant. The rapid industrialization and the new developmental initiatives in Russia have increased since the adoption of the Neoliberalism and privatization. The concern for the environment was less than the concern for the economy since the livelihoods and employment of the population was dependent on the industrial development (Ashwin and Clarke, 2002).

A fundamental question about Soviet policy during the final years of the Gorbachev era, one that was central to determining if there was a divergence from traditional policy, had to do with when environmental concerns would finally carry sufficient weight to compel authorities to make decisions that entailed significant economic

costs. As of the early 1980s, Soviet economists consistently embraced the view that the nation just could not afford the excessive costs required for environmental protections. However, with the impact of Chernobyl, the regime began to move away from this position and was willing to consider costly decisions in the interest of environmental protection (Bowers, 1993).

While many praised Gorbachev's glasnost for advancing discussions of the environmental situations, the difficulties faced by the environmental reformers were aggravated by many of Gorbachev's economic reforms. Market conditions, for example, as applied in the Soviet setting, often had an adverse impact on environmental standards. The focus on economic activity rather than the environment is not a new phenomenon since the Tsar period Russian empire, and the Soviet Union have been prioritizing economic benefit more than the ecology (Bowers, 1993).

According to survey and studies citizens of Russia appears to be less concerned about the environmental issues than do those of western countries (Karjalainen and Habeck, 2004). For the Russian citizens, environmental issues and concerns are pronounced as personal concerns about the well being of their health. In the Soviet period there were measures adopted to combat environmental problems; however, such measures were not adequate and lacked efficiency. There were phases of development of the environmental laws and policies in Soviet Russia. The Soviet Union had passed on some of the welfare schemes on the environment to the new Russian state, and these laws and policies were firmly associated with social, economic and ecological concerns

Environmental Policy During the Soviet Period

Environmental policy in the Soviet Union was closely related to the socio-cultural and political factors rather than legal factors. The public ecological consciousness paves the way for discussion on environment and guides to deal with the land, water,

and natural resources crises. There have been many administrative hindrances to make any environmental legislation in the Soviet Union. The formation of the environmental legislation and laws did take some time in the Soviet Union. After the great October revolutions, there was the consciousness of environmental conservation. The attitude toward nature by the Soviet Union was that they considered that nature's resources were inexhaustible. The revolutionaries, who overturned the socio-economic structure of the old Russia, believed that natural resources are merely building material for a prosperous and better future. The environmental law in the Soviet Union can be divided into three parts. The first phase would be from the beginning of the Soviet Russia till 1956. Second, from 1956 to the start of the Perestroika was the second phase. Third, from the era of Gorbachev (1985) to the present day would be considered as the last step. The purpose of the division was to make a distinction between the different socio-political circumstances (Zaharchenko, 1990).

The first phase, in the early years of Soviet Russia there were separate and distinctive laws and regulations for nature conservation. The management consists of protecting the land, water, and forests by restricting the rights of the landowners and the land-users. There were different laws and regulations for mining, forest, land, hunting, water, and fishing in the pre-Soviet Russian State (Osherenko, 2000). It did not have a common law to protect the environment, the specific legislation although has its pros and cons. Sometimes these rules and regulations are not efficient as the authorities are not powerful enough to stand against the lobbyist and the businessmen. The same laws and regulations continued for an extended period, even after the two revolutions. For example in the year 1927, the Russian mines were under the "Mining Statute of the USSR," and the use of the Russian land was under the "Fundamental Principles for Land Use and Land Tenure" in the year 1928. Other republics also codified some of the area regulations which were an important factor in the Soviet ecological period (Zaharchenko, 1990)

Although, the Soviet Union wanted to codify water and forest reserves but could not do it due to disagreements with other union republics. The Soviet Union later in the first phase of the ecological period passed a full resolution to prevent pollution and to improve the sanitary conditions of populated areas. This law prohibited the constructions of an entire industry that emitted harmful gases and also the resolution had set up a department for health for the inspection of the industrial emissions. This was the period when the project to conserve the land was introduce called "Zapovedniki" or State Nature Preserves. This was established to keep a trace of land for scientific research, legally hunting or engaging in any commercial activity within this area was prohibited (Josephson et al., 2013).

Despite having all these laws and regulations, environmental concerns in Soviet Russia seemed like more of efficient exploitation of nature rather than protecting it completely. Projects such as 'White Sea Baltic Sea Canal' in the early 1930s and the Great Stalin Plan were initiatives taken by the Soviet Union to build a better connectivity and transform the environment. These were also actions to sort of conquest the Far North by the "Russians" (Hopper, 1936). The first period of the Ecological law in the Soviet era focused on resolving the economic and environmental conflicts to the advantage of economies. Therefore, it can be argued here that the preservation or conservation of the environment was merely meant for the natural resources that provide economic benefits like the timber, land, minerals, and water etc. would be preserved for future exploitations. Therefore, to summarize here, the period during the Soviet Russia wanted to conquer nature and efficiently exploit the natural resources.

In the second phase, there are much more interests in the protection of the environment. There have been more legislative activities in these areas. There were the overall protection laws in the Soviet Union, unlike the first period in which there were specific rules and regulations to manage resources. The Soviet Union emphasized on more integrated laws to protect the environment and codification of

different bodies to regulate the use of the land, water, forest at all union level. The laws although made it clear that all unions have their codes regarding the use of land, water, forest, and minerals, etc. There was no substantial achievement in the second phase but, more than conservation the overall ecological concern was addressed (Zaharchenko, 1990).

The third and the present scenario regarding the environment is the most critical stage. The third period is the actual phase of the new public consciousness in the environmental policy. Today, the environmental concern is one of the most important debates in the political and social life of the Russians and around the world. There were grassroots environmental movements in Russia, which was almost nonexistent in the USSR period. There was a decree signed in November 1989 from the Supreme Soviet of the USSR entitled '*About the Urgent Measures for the Country's Ecological Recovery*.' This decree recognized the grave environmental crises that the country is facing. In the initial period, only traditional treatment was taken to tackle the ecological crises, and this decree is a shift away from that (Zaharchenko, 1990).

The introduction of centralized planning in the late 1920s was the first step to reformulate the existing State's economy and ensured the communist party's development objectives.Centralized planning deterred an independent environmental voice from emerging in the design of industrial and agricultural programs and made it all but impossible for the regime to leave resources protected on the assumption that they might provide economically beneficial "ecosystem services" (Zeigler, 1987). Environmentalism in the Soviet Union period was feeble and environmentally damaging actions such as Poaching, and illegal cutting was surprisingly permitted, and complaints related to the environment were not viewed as part of political dissent. Later on, these activities have inspired the establishments of nature protection system in the Soviet Union period. Many environmental groups were formed and operated either independently or in contact with other groups in an

informal mode of cooperation. The first of these groups appeared in the late 1960s named *"Movement of Druzin for Nature Protection"* (Feldman and Blokov, 2009*).* It was a political and an environmental movement organized to protect and defend the environment; it can also be called a social movement because the environmental concerns were not only political but very much a common social issue also.

After the collapse of the Soviet Union, there was an extensive bureaucracy fully devoted to the environmental protection and natural resources management. For example the Ministry of Natural Resources (Minresursov), this was the key institution to manage the natural resources under the Yeltsin government in 1997. This unit of the government had to oversee the federal water, geology, forestry, wildlife, and fisheries issues. However, the biggest problem was that the ministry is tied up with the industry and gets benefits. There is little incentive to advance environmental protection as they get material benefits by promoting resource development through receipts from various fees and sales (Haley and Clayton, 2003).

The State Committee for Environmental Protection (Goskompriroda) was set up to monitor the air and water pollution and the biodiversity preservation. This agency was formerly a ministry now under Minresursov has focused on developing a "polluter pays" system of off-budget ecological funds. The accomplishments have been modest since there has been a shortage of funding, turf conflicts with the federal natural resource agencies and several reorganizations. Another government institutions charged with environmental protection was the Commission on Ecological Security; this body was formed in the year 1994 under the Yeltsin government, and the purpose was to bring to notice many sensitive issues involving the Soviet government as well such as illegal whaling, illicit dumping of the nuclear wastes into oceans and environmental problems related to poor chemical weapons management. There were other two organizations to oversee the nuclear activities; The Ministry of Atomic Energy (MINATOM) is responsible for the nuclear wastages generated at the civilian nuclear plants and nuclear weapons facilities. The State

Service for Atomic and Radiation Safety (Gosatomnadzor) establishes all requirements on the handling and disposal of radioactive material. However, both the agencies are insufficiently funded to enforce their regulations (National Intelligence Council, 2011).

The Economic Transformation and the Environmental Issues in Russia

The economic transformation of the 1990s in Russia was one of the most miraculous transitions that the world has seen. Almost overnight the former Soviet Union (USSR) changed from a communist dictatorship of a centrally planned economy into a multiparty democracy with decentralized government and with regular elections. However, the West was not happy with the changes and called it unnatural and fast changes. Though the 1990s was a terrible decade for the Russians, due to the transitions, there was a lot of chaos and confusion. There was the rise of the oligarchs, and a huge income disparity was evident because the rich got richer and the poor poorer and also the living standards were low. Corruptions were rampant, and the criminal charges against officials were in huge numbers, but there was no prosecution of these officials (Treisman, 2012).

The 1990s was also the period of privatization in Russia; it had affected the economy in different ways. While in principle, the privatization was a good effort to modify the crumbling economy. However, the only problem was that the way it was executed was challenging, the liberated system was questioned, and the perceptions of economic agents were considered flawed. The transition from a centrally controlled economy to a free market was a massive change. Centralized planning restricted everything from price control to independent environment voice. The policies regarding industrial and agricultural policies all emerged from the central government. The greatest economic benefit would be checked in regularly. Any policy regarding environmental clearance and issues wouldn't be paid attention. Due to the economic downfall in the 1990s, because of the transition, Russia was not able to provide adequate facilities, public goods, etc. and therefore was highly dependent

on the extraction of the natural resources. The failed economy in the 1990s not only hampered the economic conditions but had put pressure on the already damaged environment, especially in the energy sector (Feldman and Blokov, 2009).After years of Cold War and the two World Wars, the Soviet economy was weakened; the exploitation of the natural resources was viewed as an essential way to regain the economic growth, to give job security and also for national security. Thus, efforts to regulate such exploitations were seen as impediments (Feldman and Blokov, 2009).

In the post-cold war decades, Neoliberal ideology had captured most of the western countries; Russia too adopted Neoliberalism to regain the economy of the country. Neoliberalism has transformed itself from ideology to a dominant political force (Rutland, 2008). Neoliberal reforms include cutting barriers for the movement of goods and capital. However, in Russia, the minimal interference of the government in the market was difficult. Putin carried out liberal economic reforms, and there were smashing of trade unions, tax reductions, rising rents, privatization, and deregulations. Here, Freedom from regulations also means the freedom to do what is best for the business and economy but disastrous for the environment. Freedom from rules can also mean the freedom to poison rivers, freedom to cut trees in the name of agricultural outputs and development since there would not be any regulations. One important argument here is that in fact, the growth of the economy in the neoliberal market has been markedly slower than the preceding years. However, before Neoliberalism there was Keynesianism which equally failed to protect the economy and the environment. One of the main criticisms of Keynes's theory was that it failed to tackle the gravest issues of human beings, the environmental crises. It had stimulated the consumer demand to promote economic growth, and consumer demand and economic growth are the two most vital factors of environmental destructions(Barton, 2004).

Since 1991, many environmental groups have arisen in Russia. These groups have emerged due to perestroika. However, they were varied in their attitudes toward

problems of environmental issues. Some of the groups have their roots from the *'The Russian Society for Conservation of Nature'* that started in 1924. Many of the environmental committees were abolished under the Putin's regime, and the regulatory activities of these environmental committees were placed into the *'Ministry of Natural Resources'* in 2000 (Feldman and Blokov, 2009). This decision was taken concerning business and economy, which was welcomed by the firm groups, but highly condemned by environmental groups. There was a considerable decline in the expenditure on environmental protection, and therefore there was the rise of many environmental crises. One of the main issues was the case of the public and private groups, exploiting environment beyond the safety limit which is otherwise a punishable offense but is hard to prosecute them due to nepotism and corruptions (Rosenbaum, 2013).

Different NGOs tried to step in and protect the dying environment from such exploitations. Such is the case of the Lake Baikal, where groups sought to protect from mineral extraction and logging. Several groups tried to mobilize the public on the legacy of 1980s movement when the NGOs first started to protest (Feldman and Blokov, 2009). There was a petition signed by some 3000-5000 participants sent to President Putin in 2000, and also there was a demonstration organized in Irkutsk, near Lake Baikal for public attention and awareness.One of the most significant environmental issues was the timbering business in Russia (Davis, 2003). An official said that the state of the environment in 1988 was that there was severe metal poisoning of cadmium and manganese in as many as around 68 cities mainly in Ukraine, East Kazakhstan and the Ural Mountains(Altshuler and Mnatsakanyan, 1990).There was no such thing as an environmental impact statement in the Soviet Russia, although there were few informal efforts to create something like that. One of the issues was that no one knew whom to blame for the environmental degradation as many of the programs were secret military projects in the remote regions of Russia (Barrow, 2014).

Agriculture was heavily affected by the increase of population; there was pressure to produce more to sustain the population. The use of chemicals and fertilizers started after the disintegration of the Soviet Union. The weak economy and the poverty made Russia adopt faster means to transform the economy. The neoliberal approach taken by Yeltsin accelerated the use of natural resources (Rutland, 2012). Agricultural production after the use of fertilizers and pesticides has increased and exported to different countries too. There were socioeconomic changes in some parts of Russia due to the development of agriculture. People migrated to urban places as their export business flourished and also became wealthier. Although environment was distress because of heavy use of fertilizers, soil erosion and infertility have increased in the last few years. Not just fertilizers and pesticides, but nuclear waste and radiation have contaminated huge mass of land in western Ukraine making it difficult for the farmland to cultivate (Buckley, 2017).

The long standing impact of Chernobyl accident has adversely affected the livelihood of the region. People living with the radiation were disabled for life or died; there was the loss of labor force due to this accident. Apart from nuclear radiation, pollution of water is one of the reasons for degradation of ecology and economy (WHO, 2005).According to many Soviet scientists around 1990; almost 16 percent of the country is under environmental risk. The survey shows that around 40 percent of the population lives under air pollutants that are 3 or 4 times higher than the standard rate. The sanitation is poor, and even in places like Moscow, it does not work properly. Mostly the industrial waste goes untreated, and children suffered intestinal infection due to contaminated water. Beaches around the Black Sea, Aziz Sea, and the Baltic Sea are mostly closed due to pollution, and most of the European rivers parts of Soviet Union are off bounds because they are so filthy (Ridgeway, 1990).

Gorbachev initially believed in the basic economic structure of the USSR model to be initially efficient and sound from the Soviet Union. When he became the head of

the communist party in 1985, he launched *Perestroika* and *Glasnost*. He thus aimed at increase of the economic growth and the capital investment through his policies of improvement of the technologies and the promotion of particular structural economic change. However, Perestroika and Glasnost did have a positive impact of acknowledging the system failures during the Soviet period and also did admit some of the past political, social, cultural, economic and environmental injustices that were meted out against the citizens (Dowley & Silver, 2002). Perestroika and Glasnost initiated a discussion on environmentalism and the environmental legacy that was passed on to the new Russian State (Feldman and Blokov, 2009).

The Chernobyl incident in Ukraine attracted significant attention during the 1980s. Along with the Aral Sea issue and the nuclear testing in the Semipalatinsk were the three environmental security problems concerning of the Soviet days. The overall cost of the cleanup process of the disaster was expensive, and a lengthy one and the help of the international community are needed. By the time the Soviet Union dissolved in 1991, these conditions were severe and had spread in most of the interior parts also including the Far East of the Soviet Union and Siberia and also had become symbols of Soviet system's disregard for the value of the environment (Hays, 2008).

Gorbachev initially did not believe in the accident of the nuclear facility. However, only after confirmation by the power station that several first responders died in the facility itself after they tried to contain it. This disaster was a wake-up call for the government and after the camouflage developmental projects. Due to glasnost, many environmental groups were allowed to address the environmental problems (Curtis, 1996). While Gorbachev's policy was praised for advancing the discussions on environmental issues, these environmental reformers also faced difficulties due to his economic reforms. The environmental groups although could not make any substantial change in the environmental policies. However, their work made the public aware of the environmental issues in Russia.

Anthropogenic activities and Degradation of Environment

There are many existing challenges that have come up due to environmental crises. Russia's environmental problems are caused by the years of Soviet mismanagement and recurring economic crisis. To make substantial economic growth and improve the environment, Russia has to depend on an array of socioeconomic, cultural and political changes. These factors have to be supported by international institution and engagement. There has been a major environmental crisis that posed a challenge to the country's economic growth, public health, and military and has severe global and regional consequences. Russia faces three main issues currently such as the fight for the control of the natural resources, weak institutions due to a high level of corruptions and environmental security (Newell and Henry, 2016).

The costs of environmental degradation are high, and its impact has an enormous repercussion on the health, economy as well as effects on global and regional politics. The impact of environmental security in Russia has been noticeable in the past decades. Environmental security as we understand is the relative public safety from environmental dangers. Environmental security is necessary because the threats to humans are not only military but nonmilitary also. Russia also faces the challenges of external aggression, foreign encroachment, and internal separatism apart from environmental problems. The anthropogenic issues have an enormous impact on the geophysical process as well on the health of humans and the economy of the country. Some of the environmental insecurities generated byanthropogenic activities include erosion and degradation of land and water resources, deforestation, radioactive contamination, desertification, water contamination, land and soil pollution, loss of biodiversity, climate change and so on.

Land and water resources experienced severe degradation during the Soviet period due to excessive water extraction and lack of water waste treatment. Food and water shortages are one of the critical issues Russia is dealing with from time to time. Due to agricultural land and water management recession, the problem has not yet been

solved. The sustainable production of traditional goods such as local food and timber is based on healthy soil and water bodies therefore to maintain the quality of soil and water, more scientific data and public awareness is required (Mueller et al., 2016). Some parts of Siberia and the industrial belt of the Ural Mountains and the Volga rivers are damaged to the extent that it is beyond repair (Hill, 2003).

Chemicals, fertilizers and airborne pollutants have contaminated most of the arable lands and left it infertile for agricultural production. Mismanagements and poor execution of laws and regulations have made the land and soil resources poisoned. For example, huge areas of land in the southern Russia suffer from soil erosion due to unsustainable development projects. Pollutants that are released into the rivers have accumulated in lakes and seas which have concentrated in one space due to lack of water exchange. A toxic layer of hydrogen sulfide covers in Russia and its neighboring countries due to the agricultural byproducts and untreated sewages. The primary concern is that many Russian cities are not equipped with the adequate sewage system, therefore; there is no waste management system in many of the towns, and poor law enforcements made it worst. Many hydroelectric dams were built during Soviet times on Russia's major rivers after consulting geologist and study of the location. Due to the developmental initiatives that were taken by the Soviet Union, the environment was hugely neglected in the past, and there was the constant competition with the West, in particular with the USA. This weak competition was a disaster for the Soviet economy and the environment in particular (Mueller et al., 2016).

The constructions of dams on the rivers have considerably slowed down the water flow. Volga River has been adversely affected by these dams. The influence of the dams has been even more in the flow of the Kuban' and Don rivers. The adverse result of the slow movement of the water is that it retains more of the pollutants. It affects the marine cycle; as a result, the numbers of sturgeon and other fish have been significantly reduced.

The Russian land for forestry covers about 809 million ha according to FAO criteria (FRA, 2005). It is by far the largest forest land in the world. The forest land includes non-stocked areas, and the users were higher, about 891 million ha in 2008. About three-quarters of the Russian forest land belongs to the Taiga region of the Siberian and Far East Federal districts. These are also some of the parts of the forest land which is stocked by forest. The Far East Federal Districts and the Siberian region is covered in bogs which are neither good for agricultural nor living but are considered as forest lands but not stocked by forest. The number of aged trees is relatively high in these areas and is favorable for natural reproduction and the overall ecosystem.

Soil erosion has been increasing in these regions because of forest logging in the mountains, and also vast areas of Siberia and the Far East suffer from air pollution due to the presence of industries. These areas are at risk of damage from poisonous chemicals such as Sulphur and nitrogen depositions. Those depositions aggravate natural processes of soil acidification, podzolization and leaching of nutrition elements and carbon, leading to irreversibly diminished soil and habitat quality (Mueller et al., 2016).

Forest being one of the most accessible parts of the country has been a victim of deforestation. The rate of deforestation has been alarmingly high in the Ussuri region of the eastern part of Russia. Foreign logging has been the primary activity responsible for the degrading forest cover in Russia. However, there are vast areas of undisturbed forest reserve that are protected and still a virgin. The killing and hunting of endangered species like the Siberian tiger are a major concern to nature's balance and contributing to the extinction of species. Vegetation in Russia is being damaged by airborne pollutants released by industries. Many dangerous chemicals such as sulfur dioxide are released into the air causing widespread destructions in the Scandinavian forests, Kuznetsk Basin, and the southern Urals. The Chernobyl accident also affected vast hectares of land and forest in Russia, Belarus and Ukraine (Brown, 2016). Even after the policies and projects to increase the forest cover, it

did not have a positive impact on the environment. Illegal timber cutting for either commercial use or for individual use such as cooking and heating home was increased significantly.

Since the creation of the nuclear weapons, there has always been the anxiety of catastrophe. The secret military projects in the remote areas of Russia were exposed by the policy of glasnost during the Gorbachev era (Curtis, 1996). The dangerous nuclear practices in the name of development and military are risky for the ecology and human health. These disclosures have included the adverse effects on land and naval bases in abroad. It is also known that there have been some secret cities especially selected for nuclear weapon production. The primary concern here is the dumping of the nuclear waste at sea and slowly being injected into the underground. The Chernobyl' disaster in the 1980s in Soviet Union present-day Ukraine was one of the largest nuclear disasters that took place. It was because of a flawed reactor and some serious mistakes by plant operators. The disaster was beyond repair many employees died there, and few others died in the subsequent days. It was a total cold war isolation period and lack of safety measures by the authorities. The consequence of a nuclear disaster can be seen as today, thyroid cancer being common diseases due to acute radiation. The Chernobyl disaster was the single event in the history of the commercial nuclear accident where radiation-related fatalities occurred (WHO, 2005).

Desertification is a human produced change; it is due to the scarcity of water and soils making it lose the vegetative cover. Many areas in Russia have undergone severe Desertification, factors like overgrazing due to animal productions, mining of the underground water, and other farming activities, etc. are responsible. Desertification also has broad social implications; there can be political instability and migration due to desertification. It can trigger famines, internal displacement. There can be tension amongst the neighbors due to desertification, and even armed

conflict may take place in individual cases. In Russia, due to environmental degradation, many regions are turning into a desert and infertile (Hays, 2008).

Water is a vital source of life, and it is also essential for sustenance of life in a society. Primarily freshwater is the most crucial element to sustaining life. A small quantity of fresh water other than sea water is available to humans to use as domestic consumption, sanitary use, industrial use, and for agricultural purposes. Concerning environmental security, there is the fundamental question that: what is the 'basic water requirement' for an individual to sustain life? Here; basic water would include water for cooking, cleaning, drinking and basic sanitation as well. An individual should have access to necessary minimum fresh water to sustain life. The human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses (Hall, 2014). The problem starts when due to environmental degradation the fresh water is being damaged, and some of the damages are beyond repair. There is a shortage of clean water, and water-borne diseases are on the rise.

A primary concern in the developing world is human waste. Human waste due to poor waste management in many countries is disposed of in the surface water and contaminates fresh water which is, usually the supply of drinking water. In the developing world, however, the toxic industrial waste, water-borne diseases and other forms of pollutants continue to degrade the water sources. Salinity in water is also another major issue which contaminates the water and soil. The salts present in the water are retained by the ground because water naturally evaporates. Without adequate rainfall, these salts would stay back into the ground and in the long run, would build up to toxic and poison many plants (Gleick, 1996).

Russia is the largest country in the world, and it devotes about 10 percent of its land to agriculture (Curtis, 1996). In spite of having such a huge land mass, Russia has failed to preserve its land from pollution. Erosion carries away as much as tons of

topsoil every year, due to wind and water erosion. In Russia, vast hectares of agricultural land have been contaminated by industrial toxic, pesticides, and agricultural chemicals that have been used excessively (Hays, 2008). The extraction of mineral resources has affected the ecology considerably due to its ignorance of safety limitation. Unauthorized and illegal dumping of harmful industrial, chemical, and household waste takes land out of production and makes it infertile.

The source of Insecurities that comes either from State or community would be tried to evaluate in this dissertation. Environmental degradation and Insecurities can be seen to be a product of meta- processes of development in the industrialized north at the expense of underdeveloped south (Barnett, 2001).The term insecurities would include both humans and nonhumans in its definition. The vulnerability of the people due to these insecurities is growing since the recent times. The environment became an important catalyst in understanding the link between development and political impact of Ecologism. Environmental problems are harming the country's most important aspects i.e. the health and the economy. Different studies by various institutions such as World Bank, and by the US and the Russia also have found that there is an increase in the respiratory illness and developmental problems in children is found in huge numbers in different cities of Russia. There are water borne diseases due to water pollution and congenital disabilities due to radiations and exposure to toxic air and water.

The public health crisis is one of the primary challenges due to the impact environmental security. However, it is not only the health that is of concern here; the economy of the country has also been severely affected by the lack of environmental security. There is a massive reduction in labor productivity due to illness; it is also deterring many foreign investors to invest in Russia due to fear of liability and costly cleanup of the damaged environment. Another major concern of environmental security is the effect in the regional and foreign politics. Russia being vast in land mass, shares many rivers and natural landscapes with other nations. Russia's

environmental issues pose a substantial threat to the neighbors, for example, Russia is the major polluter of the adjacent water bodies, also dumps industrial, chemical and radioactive wastes into the sea. Russia also is the major contributor of carbon dioxide (Krupnick, 2001).

Although Russian government cries that it is because of economic and social reasons that they are not able to handle the environmental security concerns. However, in reality, it is their lack of commitment and organizational capacity to address the issue. The foremost concern of the policy makers is to stabilize the economy and the financial markets and not on the environmental impacts of their actions. Spending on the environment was rather negligible; in fact, Soviet Union used to spend more than what Russia is expenditure on the environment (Henderson, 2003).

There is no proper execution of the regulations and the laws that have been established. Russia has a comprehensive legal framework to deal with environmental problems but lacks the authority and the capability to enforce such legislations. Most of the environmental challenges of Russia are the legacy of the Soviet past. The campaigns such as ‘‘solve the food problem" led to the overuse of the fertilizers and pesticides making the arable land infertile and damaged. There was no waste management system, a lot of abundant resources were considered as free and led to waste. The Russian public at present would prioritize the socioeconomic needs over the environmental improvement; even though the environmental condition is deteriorating at a high level (OECD, 2006).

The challenges to environmental security in Russia at present provide us the reality that the environmental issues are not only regional but global. It is not only Russia that has to deal with environmental challenges but also the world as collectively. Several issues like carbon emissions, nuclear testing, etc. are global problems, and the global awareness is essential. Putin administration also made a huge mistake in making the regional institutions responsible for the environmental crises. The short

sighted plans of the government had made country dependent on natural resources and therefore, efficient measures such as increased public participation, agreements with the international community for cooperation and integrate the environmental concerns into public policy has become a necessity.

Contemporary Challenges: the Socio-Economic and Health Insecurities

The degradation of the environment has adversely affected human health in general. The environmental crises in Russia are no different from the rest of the world. The changes in the climate, water contamination, land and soil pollution, irradiation, etc. have similar effects on Russia and to the rest of the world. Due to climate changes, there can be changed in the temperature, and the duration of the unfrozen ground has increased significantly in the recent times, and the snow cover has been diminishing rapidly and altered the hydrology of the area (WWF-Russia, 2008).

Other issues from climate changes can be the effects on the salinity levels of the water and soil and effects on the freshwater which mainly gets discharged from Siberia in Russia. The temperature of the water bodies also increases due to climate change and the evaporation level rises. Not only humans are affected, but the aquatic organisms are also affected severely and alter the vegetation of the area due to climate changes. There has been increasing in the forest fire in Russia. Due to the global warming, there has been growing in the forest fire in Siberia in the past years. Another consequence of the global warming is the "greenhouse effect"; the earth's capacity to control the temperature of the surface has been disrupted and making it hotter day by day (Stocks, 1998).

The impact on the human health due to the depletion of the ozone layer is severe. The air pollution in Russia was unknown to the world due to insufficient data and study. However, in the recent times, there were measures to check the level of pollution, and it was found that due to reducing industrial production and some improvements in cleaning methods, the emission of the heavy chemicals was

reduced. However, there cannot be a generalization of the study conducted by some agents because some of the sources are poor and therefore, might not be accurate. The studies carried out by the scientist, individual environmental groups and scholars were taken into account to measure the air pollution level in Russia. In some studies, it was measured that the chemical composition of the substances across the country was in a bad shape and found that the air in between Moscow and roughly 4000km east of it is highly polluted and this also includes the area close to Vladivostok (Henry and Douhovnikoff, 2008).

The Siberian region and the Far East of Russia were slightly low, however, in the remote eastern part of Russia due to forest fire the pollution level is higher, and the smoke plumes have extended towards the Korean region and the Yellow Sea. However, the specific impacts have been largely unknown due to the inaccessibility to the area. The socio-economic development of Russia is dependent on the welfare of the population. The economy of Russia has been affected by the environmental crises in the recent times. There is a massive reduction of the labour force in some parts of Russia due to illness from air and water pollution. There is the rise in the water-borne diseases and the genetic disorder due to exposure of radiation on humans (Lee, 2005).

Many foreign companies might not be willing to invest in Russia due to fear of liability and higher cost of environmental cleanup. Another major concern of Russia due to environmental crises is the foreign relations with the neighbors. Russia is also one of the largest pollutants in the region due to its various developmental projects. Most of the natural landscapes are shared with many neighboring countries, and most of the wastages are dumped in the rivers which are shared with other nations (Brunstad, 2004).

In the year 1986, the nuclear reactor in Chernobyl met with an unfortunate accident, and it was the only commercial nuclear disaster in the history of Soviet Union. The

impact of this nuclear accident was huge, and its repercussion is still relevant today. The fatalities from the exposure to radiation are huge, the staff and emergency worker died immediately after being exposed to the emissions (Feldman and Blokov, 2009). The impact of Chernobyl accident is detrimental to human health even today. There are cases of thyroid cancer in the last thirty years which has been not eradicated yet and mostly the sufferers are the children under eighteen. Not only thyroid cancer but infertility, cataract and respiratory diseases have been detected since the accident (Rahu, 2003).

Apart from the health impacts, the Chernobyl accident had substantial negative effects on the socio-economy of the Soviet Union. The displacement of the people living nearby, the loss of employment, the reduction of the labour force, and the distress on the Soviet economy to take up cleaning procedure had been massive. There was huge evacuation after the accident, and these populations were resettled later on (Hohenemser, 1988). The feasibility of the agriculture was tested out in the recent times, and it was found that the consumption of the agricultural products was safe but uses of some wild food are still prohibited and dangerous.

The ecological crises had a tremendous impact on the agriculture of Russia. Agriculture in Russia has always had to contend with an unfavorable climate. For centuries farming was concentrated near the populated areas of European Russia where crop yields were limited by short growing seasons. At the end of the 18th century, the need to feed a growing population finally led to the expansion of cropland into the southern steppe regions where better soils and warmer climate provided higher crop yields than in the traditional agricultural areas in the north (Alcamo et al., 2006).

The migration and the settlement of population on a new land due to varied reasons such as war, food shortages, growing population, etc. had put pressure on the peasants and farmers to produce more. Deforestation was the first distress on the

environment due to settlement and growing population. To cultivate the land, first of all, the forest was cut and cleared and then the other methods such as slash and burn, the use of excess fertilizers, herbicides and the hybridization of crops and the development of the monocultures also rapidly increased. The ecological effects of pesticides and other organic contaminants are varied and are often interrelated. Effects at the organism or the environmental level are usually considered to be an early warning indicator of potential human health impacts (Bozoglu, 2011).

Initially, the peasants and the farmers used their traditional methods to the extent that it was damaging to the environment. The slash and burn approach makes the land arable for maximum two season cultivation and then it becomes infertile. Therefore, the lack of knowledge and the lack of scientific methods made land and the soil erode faster and thus making it sterile. Due to increase in population and migration, the population moved towards the steppe area in Russia. However, the prairie region also had a year to year variability of climate, and this posed a challenged to agriculture, as it still does today. Droughts are common in this region because of dry air in the south of Russia (Meshcherskaya and Blazhevich, 1990: Alcamo et al., 2006).

The natives slowly occupied the grassland, and it had long-term impacts on the environment. Many regimes also tried to seize the steppe region to "civilize" the area and sponsored to resettle people to cultivate the land. The most important issue at this instant was that the settlers were in conflict with the natives and the other point was that the environment was unfamiliar to the new settlers. The natives first resisted the interference by the agriculturist and the scientists, who settled for a long to study and explore the region. Of course in the due course of time, the farmers and the peasants adopted the modern technology to cultivate land and produce but the damage on the environment (Josephson et al. 2013).

The process of deforestation accelerated in the southern part of the Siberia where the steppe region is located. One type of deforestation is logging, and logging might not be a problem in itself rather how it is being accomplished is the problem. Poor forest management, inefficient and costly operations and lastly centralized power are three of unsustainable activities (Josephson et al., 2013). The steppe region had the worst impact on the excessive settlement because the forest was cleared to cultivate the land and make pastures. The main reason to cultivate in the steppe region was that it is suitable for humans to survive; the climate and the temperature of this region are suitable for agriculture. Therefore, they did not go to settle in huge numbers in the northern and the eastern part Siberian region or in the desert area of central Asia where the climate is hostile for humans to cultivate and survive. To adjust to the new environment the peasants started using new technology to cultivate; the traditional method to plow the land was difficult in steppe region. The soil and the land unlike temperate area were different in the steppe region as the roots were matted with the massive black earth. The burning of the grass, over cropping and overgrazing, was a disaster that contributed to the soil erosion (Davis, 2003).

Towards the end of 19th century, due to increase in population, the farmers and the peasants had to do away with the traditional methods of farming and adapt the existing technology and the use of fertilizers. The scientist perceived the traditional methods as backward and therefore was skeptical about the agricultural production in the period of growing population. The communes also added its contribution to the Russian agriculture. They shared traditional farming practices and shared the chances of crop failure or farming failure. Although the methods are insufficient, the communes helped tackle short growing season and the relatively limited regions; therefore, it enforced the choice of crops, fertilizers. Also, the commune as a whole was made to repay the loan. Only after significant crop failure around 1891, the Tsar paid attention to the development of the agricultural system, modern agricultural schools and scientific researchers were done (Josephson et al., 2013).

However, it was never very successful in spite of having advanced technology introduced to agriculture. Some scientist believes that only use of fertilizers could increase the agricultural production by twofold if not more. Therefore, the use of pesticides in the agricultural sector became popular to export agricultural products. However, the use of pesticides has its disadvantages. There is a flow of foreign capital, and often it contributes to monocultures. Russia was copying the west concerning agriculture; it paid less attention to the social, human and ecological values as it is very energy intensive such as the use of transport to export agricultural production (Josephson et al., 2013).

Russia became dependent on the application of chemical fertilizers and pesticides to yield more production. Ecological concerns such as unhealthy diet and soil erosion increased in some parts of Russia. The soil became exhausted by excessive use of these fertilizers, and it was high in Russia because of vast oil and gas reserves, because it can be produced at low-cost. Although before the 1990s there was the considerably low use of fertilizers and therefore sustainability was maintained (Gianess and Williams, 2011). Certain rural areas have depopulated due to agricultural boast, people have migrated to urban areas to export its agricultural production. The only positive aspect of agricultural exports is that EU market is taking advantage of its relatively clean production. On the other hand, the small-scale farmers have contributed to the environmental well-being; they not only have restraints themselves from using chemicals but also cooperated with the local organizations in the field of water, landscape and ecosystem health to ensure economic, social and ecological welfare. Apart from chemicals, climate, pollution and agriculture, war and conflicts have equally affected the health and socio-economic development of Russia (Ryszkowski, 1994).

The Soviet people and the world suffered massively during the Second World War. The armed conflicts had severe impact and threat to the biodiversity. Apart from obvious environmental destructions, there have been direct costs of environmental

damages on humans and animals. The fear of Russia that its natural resources would fall into the hands of Nazis during the war made it evacuate the natural resources and any other raw materials they would lay their hands on. The financial cost of the wars is too much for any country to handle. The bombardment of tanks and chemical weapons and nuclear weapons has adverse effects on the environment even today. Chemical weapons have to lead to destruction, defoliation and toxic pollutants were released into the atmosphere. The destructions of the infrastructure and the casualty of the innocent civilians lead to the displacements of millions in Russia and other parts. The armed forces always target the forests and another ecosystem to deprive the enemies of cover, shelter, and food. Therefore, the forest became the most targeted areas during the war. After the war, the displaced people are left with no options but to survive on animals due to food shortages and malnutrition. The depletion of the biodiversity increases as the displaced people move to more marginal places to avoid war and casualty (Josephson et al., 2013).

The preparation of War also has huge impacts on the environment. The training process of the military leads to the destruction of land and the destruction of the ammunition have also lead to massive environmental crises because the ammunition was burned in the open creating toxic air such as nitrogen dioxide and other chemical dioxides. In Russia, most of the industrial complexes are in the remote area or the lightly developed areas of the north. Studies in these areas have found that the there have been substantial environmental impacts due to air pollution resulting in "industrial deserts." The local effects of effects of these chemicals might be higher; however, the regional impacts might be low. For example, the heavy compounds are deposited near the source, and it limits their spread of the substances, and the problem of acidification of the water bodies are neutralized by the natural buffering of water bodies, which acts as the sinks for these pollutants (Henry and Douhovnikoff, 2008).

Chapter III

Environmental Insecurities in the Far East Federal District

The Far East Federal District also called as Russia's Far East (RFE) is a remote and harsh climate region in the most eastern part of Russia. It is an administrative region of Russia created by the Russian President decree on 13 May 2000. This region which has a land area of 6,169,329 sq. km and a population of 6,251,000 (2012) is comprised of nine federal subjects of Russian Federation: Amur oblast, Chukotkaokrug, Jewish autonomous oblast, Kamchatka krai, Khabarovsk krai, Magadan oblast, Primoryekrai, Sakha republic and Sakhalin oblast(Josephson et al. 2013). The origin of the regions of the Russian Far East can be traced back to the system of economic planning devised in the Gosplan USSR (Bradshaw, 2001).The region has a history and abundant natural resources and a sense of distance from the mainland Russia due to its cultural and economic differences. The RFE with its vast 6.63 million square kilometers plays a vital role in the Northeast Asian Environmental security (Lukin, 2007).

The future of RFE is based on the relationship between the neighbors and Moscow, the proximity to East Asian countries also makes the RFE a region with challenges. The level of interest in investments in these regions has increased in the recent period especially from the USA and South Korea. The Far Eastern mostly believes that the future of the RFE is tied with the Asian countries rather than Moscow. This is not because the RFE is closer to these countries but also because economic activity can be carried off easily. However, the RFE is still dependent on the food subsidy and wage payment from Moscow. Despite its challenging geography and harsh climate, the RFE is beckoning to the countries of Asia Pacific (Azizian, 1995).

The RFE culturally is much more inclined to the Asians; however, they are more interested to be associated with the Europeans for politics and security. The Chinese population in the region has made the people racist and xenophobic. The RFE is

wedged between China, Korea, Japan, and the United States and has emerged as an unpredictable area where forces that tore apart the former Soviet Union interact with dynamics that energize Pacific Asia (Azizian, 1995).

Russia has a federal system of government, but it is an asymmetric federalism also with different powers given to the ethnic republics than for the "regions." The people of the RFE are almost cut off from the mainland Russia due to its distance and remoteness. Much of the RFE is five to six time zones away and the almost 5700 miles from Moscow. The distance although gives you some advantages and disadvantages. There is a sense of freedom and independence due to its distance from Moscow, and in one of the incidents, people in the RFE were not even aware of the collapse of the Soviet Union in 1991 and only got to about it after they interacted with people from mainland Russia. Some of the people also said that the Soviet Union never bothered about the RFE region and they doubted if the new regime would be interested in them (Davis, 2003).

Russians refer to the eastern part of Russia as “Far East.” However, many foreigners and some Russian mention “Siberia” as part of Far East. Siberia is the central Russia for Russians. There is a wide variation in describing and understanding the Far East. From topography, vegetation, climate, language, natural resources and also indigenous groups, the Far East of Russia is of a wide variety. The RFE is very cold and remote, due to this fact it is included in the definition of Russian "North." There is climate variation in every region, for example, the northern and western part of the RFE has a continental climate, and the southern part of the RFE has monsoon climate, hot and humid and with cold and dry winters. Due to the extreme weather and climate in most of the area, people only live in the south of the RFE where the climate is less harsh. The Far East has traditionally functioned as a storehouse of natural resources for the Russia state. In the recent years, exploitations of hydrocarbons energy resources particularly oil and gas on the Sakhalin islands has

increased. Moreover, there are plans to construct oil and gas pipelines through the Far East to export hydrocarbons to Asia-pacific countries (Lukin, 2007).

The population in the RFE is just under 7.5 million (Davis, 2003). It a region which is thinly populated and most of them belonged to different ethnic groups and race. Although most of them are Russians, there is a considerable number of people who are Ukrainian emigrants, Chinese, Korean, Japanese, and native people. There is an enormous demographic change due to the harsh climate in the northern part of the country; therefore most of the populations have been moving towards another region of the country. Also, the vast territorial area of the RFE has made it difficult for the population to commute quickly. The transportation cost is high is the RFE region, and hence most of the things are expensive than other parts of Russia or Europe. This vast territory is also a hindrance to development sometimes; this factor makes it difficult for the government and the nongovernmental organization to connect to the RFE. The region is economically weak because of the inferior technology and lack of diversified economy. The economy has to be diversified to make income from its resources and mostly biological resources can be exploited. Fishing, hunting and animal breeding are some of the source of revenue in the Far Eastern region (Bradshaw, 2001).

The people of the Far East are dependent on Moscow for foodstuffs and other necessities in spite of having the potential for economic growth. Some of the regions such as the Southern part of the RFE are rich in natural resources, and agriculture production is relatively high. The heavy industry of the region is also situated in the south part of the RFE. Therefore, consumer goods and food processing are carried out in the southern part of the RFE. The north of the RFE, however, has very harsh climate and so the most of the economic benefits come from extraction from the natural resources such as fishing and mining. The contribution to the economy by the RFE is only 5 percent of the national products, but the region significantly contributes to the other valuable resources such as oil, gas, and timber apart from

gold and diamonds. Exploitation of biological resources of seas and forests is one of the mainstays of the Russian Far East's economy. However, the over exploitation of these resources have to lead to depletion and reduction of biological diversity and the total extinction of many unique species in the Far East of Russia (Lukin, 2007).

The focus on the RFE is due to its environment says the geographer Josh Newell, the enthusiasm around the RFE is certainly due to the natural resources that are abundant. It has the most diverse biological region on earth. However, the collapse of the land and naval forces in the RFE leave environmental threats from rusting nuclear submarines as the greatest concern for Russia's neighbor (Zeigler, 2004). Its preservation is very crucial not just for the animals and plants but the human population in general. Given the massive forest cover, Russia can tackle most of the environmental issues. While due to globalization and foreign investment the natural resources are capitalized. There has been increasing role of multinational companies in the region, and the growth of the communication technology had a significant impact on the global economic relation (Bradshaw, 2001).

The international community should, however, ensure that there is sustainable development to protect the nature and the people who are closely associated with nature. The RFE has the indigenous community that has a history of a clash with the so-called developmental projects. The first sections of people who are affected by the "development" are these natives. According to the Cultural Survival organization (2014), there are currently 70 places of potential conflict between local groups and extractive projects – for example, nickel mining has intruded on many reindeer pastures and sacred sites (Cultural Survival, 2014).

The Indigenous people of the RFE also face threats from the intruders to their culture. For example, as figures say that today only some 10% of the indigenous people practice their ancient tradition of nomadic life or semi-nomadic lifestyles as compared to 70% three decades ago. The main reason is the decline in the self-

identification due to the assimilation of the natives with the Russian population (Anderson, 1983). Most of the population from the Northern Russia has migrated to different places due to the harsh climate and slow economy; also the patterns of language imposition and culture have isolated many of the smaller indigenous groups. Therefore, culturally, geologically and environmentally the RFE is a vulnerable region. This area is considered as the global resource and has global significance (Davis, 2003).

The Northern part of the RFE lives off extractive industries ranging from fishing to mining. It is at the bottom concerning contribution to the GDP far lower than Sakha, Primorye and Khabarovsk region. Also, these regions are inhabited by the indigenous people; the Chukotka Peninsula, for example, is inhabited by the indigenous population called Chukotka (Davis, 2003). These regions were invaded by agriculturist and scientist for developmental projects during the Soviet period and were in conflict with them. Another important area called the Kamchatka Peninsula which has the majority of active volcanoes of the RFE. This region possesses vast natural resources; most important of them are fisheries. The Economy of RFE consists of both legal and illegal extraction of natural resources. The Russian forest mafia plays a major role in the degradation of the environment, the stripping of the rare and valuable hardwoods from the forest have a severe impact on the biodiversity. The rare Siberian tigers are on the verge of extinction because the illegal logging is destroying the food sources of tiger prey on (Strangio, 2011).

There is a great potential for sports fishing and hunting in this region. Ecotourism could become big business in these regions. It is astonishing to see how the climate of the RFE has been neglected for years by the scientists as well by the government. For example, the Amur region was visited by well-known scientists and botanist to acquire information about the agricultural prospects in the region and other information on the region, but shockingly there was no study on “Climate." The administration and the scientists had entirely forgotten this important factor, such

was the condition of the environmental concerns in the Soviet Union, but we cannot generalize that there was no consideration paid to the RFE region. The economic conditions of the RFE region are dependent on the climatic conditions. The greatest attention was given to the agriculture, as the nation's welfare and progress depend on it. There are certain climatic peculiarities such as fog, winds, temperature, humidity, etc. of the Okhotsk, Kamchatka, and Chukotsk- Anadyr regions that exclude all possibilities of the development of agriculture (Novakovsky, 1922).

The Russian Far East is home to Chukchi, Yupigyt, Itel'meny, Eveny, Koryaki, Yukagiry, Negidal, Evenki, Oroki, Orochi, Ul'chi, Udegei, Sakha, Nanai, Nivkhi, and to members of other Native minorities (Johnston, 1994). The total population of the RFE was less than 100,000 souls in the early 1920s. The races that make up the people of the region vary in themselves. The aboriginals are mostly many tribes which are unevenly distributed in the region. The northern part is predominantly occupied by these tribes, and in the southern part, the population is insignificant. Besides the natives and the Russians, the RFE is composed with Chinese, Koreans and Japanese who are in significant number presently (Novakovsky, 1922).

There are many examples of conflicts between “development,” and the natives and also the First Nation rights are offered here, one from Primorsky Territory (*Krai*), it is just north of the Korea and China borders, and the other from the Chukotka Autonomous District (*Okrug*), which is just across the Bering Strait from Alaska in the far northeast comer of the Russian Federation.The territories are rich in natural resources, for example, the Primorsky Territory is rich in timber, natural gas, oil, and minerals. Its waters are also rich in fish and other marine animals. These areas have faced the effects of decentralizations and the consequences of joint collaborations of the foreign companies in the exploitation of the natural resources. Areas affected are the Udegei, Nanai, Ul'chi, Orochi, and other Native people in the territory. The natives in the Udegei and Nanai areas are either hunters or fishermen, who have continued to practice hunting and fishing for subsistence. These areas, therefore, are

critical to both the physical and cultural survival of the Native peoples (Johnston, 1994).

While Russia is trying to find a place on the world stage, the most important thing to do is the development of its territory. The RFE in the recent years has come to notice due to many factors such as growing market in the Asia Pacific region. The RFE is the window to the Asia-Pacific region and potential market for the resources that the RFE has. It is logical and rational on the part of Russia to develop its Far Eastern region for near future trade business. Greater economic ties with the Asia-Pacific nations will felicitate and encourage peaceful coexistence and economic interests. However, there are logistical challenges to this approach; the distance from Moscow has always been a challenge to accomplish the goals set up by the government. Although due to several factors the RFE is far from doomed economically, the natural resources will at least keep the locals make their livelihood. However, the problems of poor infrastructure, harsh climate, corruptions and also weak leadership will always keep the RFE lagging behind the European Russia for a considerable long time (Ziegler, 2004). Therefore, due to this complex nature of the area regarding trade, development, military, border, etc. The Far East is an important region to study. Different types of security concern have emerged since then, and the environmental security became a significant feature of public policy.

Significance of the Far East of Russia: Economic and Geopolitical Aspects

The Far East of Russia has got security concerns with its neighboring countries. The border with major Asian countries like China, Japan, Korea and Alaska (USA) makes it geopolitically important for Russia and the world. It is considered as the window to the Far East countries. The vast reserves of natural recourses and the land mass make it an economically important region. The demographic issues in the Far East also make it vulnerable to many conflicts. Many far eastern believe that the region is sparsely populated, but the border provinces of China are densely populated

and resource poor and therefore would invade or occupy their territory (Josephson et al., 2003).

The authority in Moscow also wants to reassert their power over the region. Russia currently is interested in the Far East because of the Asia Pacific Policy. The West, in particular, the USA's interest in the region has made Russia uncomfortable. The abundant natural resources and the new market for oil export have done the Far East an important region in the recent period. The Sakhalin oil and gas fields are vital for Russia as well as for the other countries. There is also a sense of nationalism in Russia to control the Far East region. Most Russians in the Far East seems to be worried because of massive Chinese and Japanese presence in the south and east of it. Also, the Far East was the most militarized region in Russia, due to its capacity to manage military base. Therefore, some of the old strategic military bases are still active and critical to Russia (Davis, 2003).

Russia has an interest in the economic and security integration of the Far East. The regional peace and safety is an important aspect of prosperity and development. As we know the Far East of Russia was always a difficult region to control and administer. The distance from Moscow and the harsh climate makes the Far East a challenge for Russia. The borders of the Far East need to be secured due to its abundant minerals and increased flow of investments from foreign companies and countries. The welfare of the Far East of Russia is a vital part of Russia's policies concerning security concerns. Since there is constant tension in the Far East region like the Korean peninsula and the island issue with Japan. Of course, basic geopolitics means not allowing a single country (in this case China) hegemonic access to its valuable commodity base, the fear of the Russians is legitimate as China has demographic advantage over Russia and its rising military and economic influence, therefore linking the development of the RFE with China has created an anxiety amongst Russian people. The Pacific Rim democracies also have an interest

in the elaboration of the RFE region because of the natural resources, the access to the resources are valuable to any country (Lee, 2012).

The recent evolution of the Asia-Pacific region made Russia inclined towards China than the USA. Beijing is more willing to engage in the Far East due to its proximity and economic benefits. At present, the three major powers are involved in the economic and security cooperation. The relationship with China is vital because it is the largest market for the RFE's natural resources such as metals, coal, and timber also china serves as the principal supplier of foodstuffs, clothes, and electronics items to the people of the RFE region (Lee, 2012). The relationship between these three countries will be complementary as long as there are common security agendas. The involvement of Russia in the Asia-Pacific region is due in large part to its improved relationship with China. Moscow and Beijing have been cooperating on bilateral trade mainly arms sales. Also, China and Russia have developed a close partnership that reflects the shared understanding on the issues of West domination in the Asia-Pacific region and the political stand on the Syrian crises, Iran sanction and the NATO expansion (Lee, 2012). There are other developments such as energy exports, joint position on the Korean issues and lastly military cooperation and security agreements with the Shanghai Cooperation Organization. The cooperation and the SCO is a significant development on the safety threat because many far eastern believe that China is a threat. The Chinese military development and the migration of Chinese to the Far East seem to be the most serious concern on the Russian side, as the northern Chinese part is resource poor.

However, the relationship with other countries such as Japan remains a challenge. Because both countries had conflicts in the past, there is an inadequate involvement concerning security concerns. Initially Japan refused to take the official cognizance of the existence of the RFE; however, finally, it accepted it. The troops that were stationed at Vladivostok, which they agreed to remove after the Russo-Japan conference that took place in Manchuria (Advocate of Peace through Justice, 1922).

There is a territorial dispute between Moscow and Japan on the northern territories for the Kuril Islands. The conflict over the Kuril Islands goes back to the Russian empire era when Russia first claimed its sovereignty over the islands. Although, there were few treaties in which a chain of islands was given to Japan in exchange for the full control of the Sakhalin islands; however during the war of 1905 Japan seized back some of the southern islands of the Sakhalin after the Soviet Union's crushing defeat. The strategic location and the natural resources in the Kuril Islands made it more sought after. The islands are rich in minerals, hot springs and rare metals such as Rhenium which is used for the production of the supersonic aircrafts (Stephan , 1974).

There is a lack of trust and mutual interest between the two countries and therefore lack ties regarding northern Asian nation's policies (BBC, 2013). One of the most significant aspects of the importance of the RFE is that Russia at the global level is trying to eliminate the threat from North Korea; the nuclear development in the region has made Russia worried about its border regarding security. Russia also wants to prevent the use of force on North Korea and connect the Siberian rail with South Korea. The reason for the wanting to eliminate the nuclear threat is not only environmental and safety concerns but to stop the desire of other countries to "go nuclear" to counter attack the threat from the North Koreans (Harada, 2013).

The RFE is a critical region because it has relatively weak institutions. Moscow and the RFE do not always share a warm relationship; they are most suspicious of each other's actions. They share different regional aspirations such as control of the natural resources and maintaining cultural independence from Moscow (Bradshaw, 2001). The local officials had a considerable amount of power over the regions and acted as a boss in spite of the fact that the institutions are weak in these areas. The regions also compete rather than cooperation. They all want to maintain a "good" relation with Moscow for personal benefits. Therefore, the policy makers that talk

and discuss greater collaboration with the Asian countries have to first focus on the relationship with the RFE regions.

The RFE region had some of the big developmental projects such as Sakhalin energy projects, but the economic recovery as compared to the rest of the Russian states was prolonged. Sakhalin is located in the isolated geographical location; therefore, it is also a strategic defense location for Russia, although, it is self-reliance on local coal resources with a limited cross regional trade. Some of the projects in the Sakhalin offshore are still at the exploration stage (Bradshaw and Kirlow, 1998).

The economic interaction also at one point of time declined due to many factors. The region's contribution to the industrial productivity has also diminished overall. Also, the demographic change is increasing day by day and shortage of labor force due to migration. There is a decline in the fertility rate because of environmental issues affecting the health of the population. There is the growth rate of Tuberculosis; HIV/AIDS etc. have burdened the region. Not only health but social issues like substance abuse and suicide and violence etc. have significantly increased in the region. There is a major problem of Chinese influx in the region and xenophobia is greater than before amongst the people of the RFE. There has been trading relations with China since a long time, many Chinese male workers work legally in RFE region and vice-versa. Despite this cordial relationship, there is a misinterpretation around both the sides of the borders. Also with RFE increased dependency, there has been insecurity amongst the Russian people for the amount of influence it can have over the RFE region. Asians were regarded as a threat to their huge presence in the RFE region and during the era of Stalin the Chinese were cleared out in 1937 (Kim, 1994).

The RFE is a region which shares borders with many countries such as Japan, China, and Korea and these boundaries are responsible for significant international transshipment connection for transnational trafficking in narcotics, women, migrants,

timber, and fish. With the region's declining economy and the rising population since the collapse of the Soviet Union, the RFE is faced with the task of balancing the security needs and the economic opportunity (Kim, 1994).

There is also a lack of law enforcement, and high level of corruptions and the presence of criminal networks make it rather a difficult place. The terrorist organization in the Central Asia and the Middle East has been increasing their criminal network and sold guns and move out money via the RFE. After the collapse of the Soviet Union, the borders have become more open and freer for the travelers; therefore, the cross border communications have increased ever since giving the drug dealers a passage to make contacts with the interested parties (Olcott and Udalova, 2000).The effects of such networks have been global, because, the criminal organization is more cooperative than the governments.

The primary concern of Russia about the RFE is the Environmental issues. There have been significant changes concerning environment and security dimensions in the RFE region. The traditional threat to humanity such as War and violence has been replaced by new non-traditional threats. For example, the old and deteriorating nuclear facilities pose health and security challenges. It has been reported that the numerous environmental accidents have been caused is from the old nuclear installations, old types of equipment and old pipelines (Johnson et al., 1999). The chemical and radioactive wastages were dumped in the rivers and empty fields which are a greater ecological threat than it is assumed. Illegal fishing and logging are some of the environmental crimes that are increasing and deprive the government of revenues and stable economy. Some other issues of concerns are the mining activities that have damaged the pastures lands due to the use of heavy technological types of equipment to fulfill the economic needs. The ships that use the northern sea route has polluted the coastline due to its dump refuse into the ocean with later foul the water (Johnston, 1994).

The Russian Far East is the land of abundant natural resources, and the destruction of the region will have a global impact, both economically and ecologically. Therefore, the significance of the RFE has increased in the recent period. Different concepts of "security" regarding environment have emerged, and the discourses on environmental security and the impact of the insecurities that come out of these crises have been talking about.

Environmental Insecurities in the Russian Far East

The Environmental degradation induces uncertainty and host of other conflicts in the world. The leading cause of environmental insecurity in the Russian Far East is the environmental degradation. The Eastern area of Russia is important in mitigating climate change, maintaining biological diversity, and providing a reservoir of natural resources for future generation (Lukin, 2007). Land degradation, soil and water contamination, radioactive contamination, air pollution, etc. have created a hostile situation for the natives of the Russian Far East. The various sources of the land, water and soil contamination in the Far East of Russia are deforestation, poor management of wastage system, old nuclear reactor, logging, etc. The commercial exploitation of the natural resources has been creating the major environmental degradation in Far East of Russia as the Far East is considered the store house of natural resources (Lukin, 2007). Food shortage is the major insecurity that Russian Far East faces due to dietary imbalance, lack of milk products, vegetables, and fruits, deficit of vitamins and microelements, chemical, infectious and parasitic food contamination.

The climatic conditions of RFE might never be able to produce sufficient agriculture to support its population. Due to land and soil degradation, many areas have been unsuitable for crop productions. Not only fertile land but the over exploitation of the biological resources also leads to depletion, reduction of the biological diversity, and the total extinction of some species. Many of the problems related to fishing, for

example, came after the collapse of the Soviet Union because the control of the authority ended with the disintegration (Lukin, 2007).

For example, the Amur Valley had the most fertile land in Russia; it has been damaged due to the extraction of resources beyond its capacity. In the Soviet Era, the Far East had failed to produce sufficient food production for its population due to human error such as misuse of machinery and repeated failure to deliver on time. This continued for a long time, and hence RFE never gained back the potential to produce crops for its population. Therefore, RFE has to rely heavily on imports of agricultural products, leaving it vulnerable to exchange rate in the market. Both the Russian and international press have declared that there was potential food shortages and hunger in RFE as recently as in 1999 (Duncan and Ruetschle, 2002). There was the need of food aid from donor to support food scarcity in Russia. The improvement of the food supply and food accessibility in the regions of the Russian Arctic, Siberia and the Far East is of extreme importance. There should be control of chemicals in both quantity and qualitative ways to control fertilizer's contaminants in food this will help in improving the food shortages in the region.

Another environmental insecurity faced by the RFE is the availability of clean drinking water. Due to accidents on the sea around the 1960s and 1990s, there is a grave threat of environmental insecurity problem for the Russians as well as to other countries around the sea. The leakage of liquid radioactive waste tankers has caused a large damage to the water and nearby land (Davis, 2003).

Due to water contamination, RFE has been facing a major crisis to provide safe and clean drinking water facilities. An individual should have access to necessary minimum fresh water to sustain life. The problem starts when due to environmental degradation, the fresh water is being damaged, and some of the damages are beyond repair. There is a shortage of clean water, and water-borne diseases are on the rise in RFE. Salinity in water is also another major issue which contaminates the water and

soil. The salts present in the water are retained by the soil because water naturally evaporates (WWF Russia, 2008).

The melting of the permafrost serves as another revealing indicator of climate change. Almost more than half of the country is covered in permafrost which is affected by the climate change. The top layer of the frozen ground has gradually melted since the 1970s to 1990s. There are severe consequences from the increasing temperature of the permafrost. The risk of dangerous cryogenic phenomena such as soil creep, thermokarst, and land subsidence was high due to the rise of the permafrost temperature. Other issues of concerns emerging from the degradation of the permafrost are the danger to infrastructure in the Far North. The roads, oil and gas pipelines, storage tanks, oil fields and buildings are built on piled footing with the permafrost as their base, which is dependent on the certain soil conditions and cold temperature (WWF Russia, 2008).

The environmental degradation has taken a huge toll on fresh air and oxygen. The extraction of minerals can cause huge air pollution. There is the sense of environmental insecurity of not able to breathe fresh air, causing huge concerns among the citizens. The processing of minerals such as gold and silver causes enormous air pollution. Magadan Oblast in RFE has recorded the massive air pollution due to mineral extractions (Josephson et al., 2013). The promise to improve the economic conditions of the region has led to the commercial exploitation of the region. Men were promised employments and a better life; therefore the capitalization of the region started. People deprived of fresh oxygen are a huge concern for humanity and a matter of great concern for the international community. Russia in general including the RFS has the potential to solve most of the environmental crises in the world. It is one-third of the land is covered in forest, and massive natural resources are available to address most of the environmental issues.

A Large chunk of environmental insecurity around the world comes from environmental issues. Environmental degradation adversely affects the livelihood of people, which in turn makes them vulnerable to violence. Environmentalist, Ayo Tella says that violence from environmental crises can be of many types such as insurgency, riots and civil wars. Many countries have in fact faced it, for example, the African countries and the Middle East (Najam et al., 2016).

Environmental degradation and the insecurity of the natural resources are undermining our ability to tackle some of the biggest global issues. The political and the economic context of the environmental insecurity cause the debates on how at the political level there can be challenges to deal with the environmental insecurities that arise from the decline of the biodiversity. It triggers activities such as organized criminal networks, transnational corporations, and governments at varying political levels. The cost of such activities contributes to even more brutal exploitation of the fading natural resources, as well as the further damage of air, soil and water quality. These developments, in turn, aggravate the competitive nature in the individuals, groups, and nations for what is left of the natural resources. The new insecurities and vulnerabilities ensure elite and popular support for self-interested 'security' (White, 2014). Insecurity can be of different nature, and environmental insecurity is creating conflicts, and also geopolitics has been brought into the notice. The fight for the natural resources and the struggle to exploit it economically has created the greatest conflicts of our century.

Environmental insecurities have been associated with the geopolitics, resources, and conflicts. (Dalby, 2003) There is the link between environment and conflict. Dalby says that Environmental matter causes threats to humanity. Thomas Homer-Dixon's teams of researchers, who are known as the Toronto school, researched the complex links between environmental scarcities and social responses which, when compared and coupled to other political factors such as weak states with inadequate resource management, appropriate infrastructure provision or conflict resolution, would likely

lead to open conflict. This research was an attempt by the Toronto school to establish the causal link between environmental scarcities and disputes. However, there are significant studies that conflicts are related to specific geographic locations. For example, the ENCOP project related the environmental conflicts to development problems and the spreading influence of industrial societies. The most affected areas according to this study are the poverty ridden marginal lands and the most remote parts of Africa where the conflicts to control the resources are high. The other pattern here is that the indigenous people are the worst sufferers of these exploitations (Barnett, 2001).

Soon there were other studies by environmentalist that shows that there is the clash of the local resources and global commercial economy. The local mode of recourse extractions such as fishing, traditional agricultural was replaced by commercially charged exploitation of the resources. These are the critical sequence that mostly leads to violence. (Dalby, 2003) argues that there is a counter argument to these debates, that resource scarcity isn't the first reason for violence. More specifically the argument was that 'greed' rather than 'grievance' was the motivation behind some of the constant violent conflicts in the poorer parts of the world. The struggle for the natural resources such as timber, diamonds, and oil in some of the resourceful areas such as the Middle East, Central Asia, and Russian Far East, etc. is to get quick rich and not to take the slow and painful process of economic development (OECD, 2006).

Thomas Homer-Dixon's analysis suggested the primary factor of political violence were scarcities, but Dixon's report did not assert that all political violence is due to scarcities and that all scarcities are alike. He purposefully set aside the concept of security because it was inadequately defined and that violence is easier to identify than insecurity. He concluded that the environmental violence is of small scale, usually within a territory which can be tackled by the authority even though there are possibilities that due to environmental violence there can displacement of the

population. He pointed to the fact that if there is the scarcity of resources the privileged and elites might increase their control over the resources and the poor are further marginalized. The migration and displacement cause the ethnic groups to clash with the same ethnic groups or national groups in the urbanizing slums of the southern states where migrants usually live. They dispute over the control of resources in these places (Dalby, 2003).

Many of the conflicts and violence around the world is due to the environmental insecurity caused by environmental degradation. Many of the disputes between the industry, environmentalist and the indigenous people centers around the deterioration of pastures and water resources and subsequent harm to domestic and wild animal population (Johnston, 1994).

Major conflicts between the industry and native people are issues related to water resources. The RFE has a population of tribes and residents that are still practicing subsistence systems such as hunting, gathering, and fishing with their particular land use practices and patterns. Reindeer breeding, hunting, and gathering are integral parts of native cultures, and their destruction implies the extinction of the native cultures (Johnston, 1994).

Kinship was the fundamental principle of the indigenous people; however, they did exchange various form of engagements with the non-natives. The policies for the "development" of the indigenous people were the common perception of the west that native people were to be saved from their primitiveness to survive and become civilized (Josephson, 2013). In the Soviet Era, the Soviet Union did try to make the indigenous people like modern Soviet individuals who are driven by socialist ideology and industrial development. The intervention in the lifestyle of the natives and the tribes had caused conflicts in the past and the present. The environmental degradation started in the RFE as soon as the so-called “development" process began to take place (Dalby, 2003).

The Water crisis is the major reason of conflict in the RFE. The city of Vladivostok has once declared a state of emergency due to an acute shortage of water. The city suffered from drought, as well as a dispute between water and energy suppliers. The state of emergency means the water supply to the city has been cut off except for the schools and hospitals and the residence getting only a few hours of water supply. There has been unrest and conflicts due to this region. The RFE region has the chronic problem of providing clean water to its residents. There is also power and heating crisis during the winters when the power is disrupted. People have protested in the region by blocking the Trans-Siberian railway to protest against the poor living conditions (BBC, 2003).

Political tension due to water crisis is another major issue of environmental insecurity. Political instability in the RFE has always been occurring since the Soviet times. On March 1969, near Damanski/Chenpao Island on the Ussuri River, the Soviet and Chinese forces clashed severely and about 1000 soldiers were killed in the conflict. Due to this confrontation, the tension between Moscow and Beijing had escalated due to the water issue of the Amur River (Gerson, 2010). However, after the warming of the relationship both the countries were engaged in various trades and commerce. The Amur River border had eventually become a gate for exchanges between the two nations. And most of the political and border issues were settled peacefully through a series of treaties that were signed by both the countries. However, the main problem here is the lack of trust by both the countries haslead to suspicion and long-term mistrust.

The trade in the Amur River valley has made migrants migrating to this region. The mistrust between the two countries has tainted the relations, and hence the Russians think that the Chinese have invaded their region by sending migrants. The Amur basin is the primary cause of the recent clash with the Chinese and Russians. The different developmental projects such as derivation projects have created conflicts between the nations (Barbanti, 2004). The Amur basin was considered infinite,

however, in the recent years; there has been severe scarcity due to significant commercial exploitation by some regions of China and Russia of course. The water issue in the border area of China and Russia is because of the growing water scarcity in the north of China, and the officials have asked to limit the use of water. However, at the same time, agriculture is still flourishing in the northeastern parts of China where the crops require decent amounts of water to sustain it. Therefore, the water from the Amur basin of China's side is caught in the conflict between the two regions for the need to feed the population and the demands to save the dying river as the water tables dropping fast (Lee, 2012).

Geopolitics has been influenced by the degradation of the environment. Abundance and scarcity are politically and geographically located, and environmental security may not be related to resource wars around the world. Both the factors may be equally responsible for violence around the world (Dalby, 2003). The geopolitical significance of Russian Far East is an important aspect of environmental security and insecurity. The principal source of insecurity in Russian Far East is the environmental damage. The Russia's nuclear facilities, for example, have been a great source of insecurity to the people of the Russian Far East. Also, the majority of the nuclear facilities in the RFE are of military significance because of its location in the strategic places. However, the presence and functioning of such nuclear plants cause an increased risk of nuclear accidents. There was a serious nuclear accident in the year 1985 in Chazhma Bay of Primorsky Krai (Lukin, 2007).

The damage to the environment is creating conflict between the natives and the non-natives in the RFE. As it is known that the Far East of Russia has one of the most abundant resources in the world. The place is thinly populated and blessed with natural resources. While the region is valuable for Russia regarding resources; the region has also always been challenging for Russia (Davis, 2003). The Far East borders with two most important countries in the east Japan and China, with whom Russia always had unstable political relations. There was always the Chinese

domination in the RFE region since many centuries later in the time came the Russian domination and penetration (Stephen, 1994). Even in the current era, we see the Chinese population in the RFE a lot more than ethnic groups. Close by is the unpredictable Koreans, South Korea, and North Korea. The nuclear aspiration of the North Koreans makes it rather difficult for Russia to be at peace in the RFE region. The first nuclear crisis of the North Korea was during the Stalin era, and the motivation to go nuclear might be economical as well military (Perry, 2006).

Moscow being thousands of miles away is the capital city, and the distance between the Far East and Moscow has played a huge role in the maintenance of a streak of independence from the central government and has never been easy to rule the region. Mostly the region is mountainous and cold, it is less populated and one of the least populated parts of the world, just below uninhabited Mongolia. Defending and Managing the region, therefore, has always been a challenge for the authorities in Moscow (Davis, 2003). Therefore, the geopolitical importance of Russian Far East is rising since the natural resources have become the center of attention.

Despite being in a geopolitically important region, the Far East has been underdeveloped for many years. However, there are two areas - energy development and trans-shipment through Russian territory - which may attract large-scale foreign investment in the region (Zakharova, 2016). East Asia's demand for energy is expected to grow shortly. Part of increasing East Asian demand could be met by oil and natural gas from the Sakhalin continental shelf. Consortia comprising U.S., Japanese and Russian firms have begun the first two phases of a project to develop Sakhalin reserve (Katona, 2016). After the collapse of the Soviet Union and the economic liberalization, Sakhalin has experienced an oil expansion with extensive petroleum exploration and mining by most large oil multinational corporations. Multilateral consortia are being formed to bid on the next three phases of this project. These projects are expected to develop and connect the Far East with the mainland Russia in future if successful.

The roughness from the economic reforms of the 1992-1993 had a huge impact on the RFE region. The subsidies and credits that were usually granted by Moscow were stopped, and investment in the region also slowed due to the economic crisis; therefore the local governments apparently stimulated the Russian Far East independently to seek cooperation with countries in the northeast Asia (Chang, 2002).

The focus on the Far East has been shifted in the recent times due to some events. The Environmental crisis is one of the major issues which the Far East is dealing with in the recent times. Comprising almost one-third of Russia's territory, the Far East district is home to major natural resource deposits, and essential to maintaining increasingly valuable Asian trade routes, the Far East Federal District is a strategically significant asset for Russia (Davis, 2003). The region is challenged with severe land degradation, water contamination, preservation of the forest and the urban development. Some of the problems are the following.

- Natural and anthropogenic disasters such as land, soil and water pollution. This is the most severe form of insecurity that is being faced by the Russian Far East population. Here, insecurity is not merely for the humans but the nonhumans also. The marine population, flora, and fauna, etc. are equally damaged by the intrusion of the developmental projects.
- Reduction of growth areas due to impacts such as deforestation and industrial development, Far East of Russia is, unfortunately, the poorest region in the world. The extraction of the commercial resources is the main reason for such slow growth.
- Predatory and poaching extermination of tigers, musk deer, ginseng, lemon trees, and the Amur sturgeon. The extinction of the Siberian tigers is a serious concern. The biodiversity of the Russian Far East is hugely dependent on its habitat. It includes the humans and the non-humans also.
- Lack of proper resource management and policy implementation.

The challenges of Environmental degradation are to be taken seriously. After the World War two, the world has changed considerably. The focus has now shifted toward the natural resources rather than people. The military development has become a priority for the leaders rather than the environment of course. The slow pace economic development among the natives was considered as a liability to the development of the industry, and the natives were forced to assimilate without regard for the consequences to the natives who are mostly indigenous people. It destroyed the fabric and structure of the native life. The most important aspects of these indigenous populations are that their life is integrated into the land, resources and kinship structure of society. Mostly the non-natives are involved in the industrial development leaving the indigenous people without jobs (Tresierra, 1999). Most of the service occupations are also occupied by the non-natives in these regions. Between the 1970 and 1980, most of the deaths are of the indigenous people. They died because of the domestic and the industrial accidents. Fatality from industry has created a sense of insecurity amongst the people who worked there. More the authority tried to integrate the northern people into Soviet society the more it has created a conflict of interests and survival.

The RFE is an important regional power in the Far East and Russia itself. Due to its distance from Moscow, the RFE has gained considerable independence from the control of Moscow. It has now considered itself as beyond the reach of Moscow regarding economic matters. The RFE now has moved its policies from Moscow toward the Far East, especially the Pacific Rim region for better economic prospects and other benefits (Lee, 2012). There have tensions in the past with Moscow and the regional centers; however, it is not new that the regional aspirations have irked the power at the center. The rise of the political and economic power and aspirations should not be underestimated. The non-natives of the RFE have been trying to move out of RFE toward central Russia or to the south where economic opportunities are available for example Asia (Blank, 2016). Some natives look toward the north and

other circumpolar first nation as models of economic political and cultural empowerment and sustainable economic development.

The Developmental Initiatives in the RFE and its Implications

The Far East of Russia has economic potential to contribute to the national GDP. The region's prospect for economic development depends heavily upon its ability to develop its infrastructure. The RFE has abundant natural resources, but the economies of the region are not diversified and rely on only single industry or small set of commodities such as gold, diamonds, oil, gas and other natural resources. The Far East of Russia has market potential if the resources are exploited to its potential; but, the lack of technology and harsh climate has restricted the development of the region. After the collapse of the Soviet Union, much of the rationale for industrial development in the Far East was lost. The reasons for downsizing the industrial base in the Far East are due to radical market reforms and weakening of the military defense complex, however, the greater spirit of the Northeastern Asian region to cooperate economically and politically to build an industry in the Far East of Russia has been a positive sign for the economy of the RFE (Bradshaw, 2001).

Most of the studies on the economic development of the Russian Far East stress more on the vast natural resources that it possesses. In fact, the economy of the RFE is dedicated to the exploitation of the nonrenewable resources such as gold, diamonds, and other minerals and renewable industry such as fishing and forestry (Bradshaw and Kirlow, 1998).The raw materials do not have much value; they are far more valuable when it is processed into completed products. In fact, some of the timbers of the vast forest are also of not very good quality because it is covered in permafrost. The quality is better in the milder region in the Southern part. The fishing business is a major contributor to the economy from this permafrost area. The only obstacle in the RFE is the transportation and the lack of infrastructure. The production cost and the transportation cost is high in the RFE (Sheingauz, 2000).

Given the state of the RFE in Russia, the major funding for the developmental projects is funded by the Far East Asian countries. The most likely investors would be Japan, Korea, and the United States. Mostly vast majority of the investments in the RFE, almost 84 percent flows to only two provinces –Sakha-Yakutia and Sakhalin. The share of investment in these regions from China is in fact very less, but this figure will doubtless be increased. The raw materials were sent to the European markets and made some lucrative business in oil, gas, diamonds, etc. the RFE was seen as a profitable market by the Asian countries that Moscow was worried that it would seek for an independent country. However, the RFE had a practical conclusion to the confusion. It appears to be looking west for politics, culture, and security and towards the east for economic benefits (Lee, 2013).

To make the RFE accessible to Moscow and other countries, Kremlin is trying to attract investors to the remote areas of the RFE. Moscow recently created a new state Ministry for the Far East and had planned for a giant public company that would be responsible for the Far East and Siberia. The federal state of Vladivostok was considered as the region for the business and trade center in the region and also for Asia Pacific innovation in the Asia-Pacific region and also earmarked for an extreme makeover of the city of Vladivostok (Lee, 2013). However, there were questions as for how to proceed with the plan and how to overcome the economic barrier and attract investments to the Far East. But Kremlin strategy to develop the RFE has huge repercussions on the environment and economy along with social implications.
Alexander Gabuev has stated that Russia lacks strategy when it comes to the RFE. The increasing role of the Chinese and U.S trade initiatives– the Regional Comprehensive Economic Partnership (RCEP) and Trans-Pacific Partnership (TPP) respectively have made Russia interested in the Asia-Pacific policy (Zubacheva, 2016). Some argument against TPP has come from the geopolitical realm because China and Russia are no parties to TPP and possibly could diminish the benefits of the organization (Hartwell, 2016). The most important part of the cooperation between Russia and the East is the energy sectors. There were ambitious projects

being developed and discussed in the field of energy with China, Japan, and the West as main participants. The energy sector is also a most important industry which has to control and strengthens the regional power. Economic development and expansion of production in the RFE region will be characterized by the enlargement of the natural resource utilization and exploitation within the national economy.

The Far East region has been undergoing development in the recent decades, and the result is that the economic potential has been established that plays a vital role in the country's economy. The resources available in the Far East region are necessary for future as they are mostly metals and minerals. There metals and minerals essential for the development of the high technology and high energy technology e.g. tungsten and molybdenum. The most severe consequences of development are industrialization and urbanization along with the increase in the anthropogenic pressures on the environment. Because the environment of the Far East is fragile any increased anthropogenic activities will have severe consequences on the environment especially in the development zones (Kondrashov, 2004).

The potential of the RFE is the energy sector and several projects have been making steady progress as it is of strategic importance to Russia and making the RFE as an energy hub. The most important developmental projects were started in Sakhalin which has been the most important region for oil and gas. Some new production and transportation are planned to build in the region for Liquefied Natural Gas (LNG) (Fortescue, 2016). There is the Yakutia region (Sakha Republic) which has been the center for fuel as the construction of a major pipeline for power generation in Siberia which will support many countries such as China and the Irkutsk region in the years to come (Investment Guide Book of the Sakha Republic, 2011). In the Amur region also there has the Amur gas processing plant which is a fuel and energy complex has been expanding in the recent days (Henderson and Mitrova, 2016).Several investments in the energy projects such as to modernize and develop the Eastern Siberia –Pacific Ocean pipeline (ESPO pipeline) to increase the oil exports has been

prioritized in the recent times. The coal industry, for example, is another top priority for the Far East federal district. There were few projects chosen to be transformed into the so-called advanced special economic zones (ASEZ) in the year 2015. There was the construction project in Khabarovsk Krai which is a coal port(Turovsky, 2016).

The metal industry, especially the precious metal industry has grown in the recent times. Today, the iron ore is one of the strategic plans of the Russian government as it has set up different mining and processing units in the district of Yakutia similar plans are for the Jewish autonomous region and also to connect it with China through a bridge. The gold industry of the RFE is huge, and it is one of the most abundant metals found along with diamonds. The Magadan region is known for its gold deposits, and the extraction has been increasing predominately. There are other few deposits in the Amur region and two more in Kamchatka region which would be used for production shortly. The RFE remains focused on the commodity-based economy and its interdependent infrastructure projects. The upgrading of the trans-Siberian railway and the Baikal-Amur mainline which is supported by the national wealth fund is the recent activity to invest in development that would support further economic benefit (Turovsky, 2016).

The fishing sector in Russia is a huge business and is one of the strategic objectives of the RFE. The development of the largest fish processing cluster in Primorsky Krai, however concerning other sectors this area is lagging behind but even though there have been positive changes in the industry. For example, it was determined by the Russian government to attract investments of the company “Rosneftegaz” to build a new shipbuilding and ship-repair enterprise “Star” (International Finance Corporation, 2005). Another major project that Russian government is undertaking is the creation of a spaceport in the RFE known as an eastern spaceport. This project was executed by President Putin after a series of scandals. The Far East although

with all the developmental projects still struggles for development and had small impacts on regional development (The Guardian, 2016).

However, the industrial development has been progressing positively in some parts of the Far Eastern Federal District. While Russia as a whole has been experiencing a downturn in its industrial production but the RFE has increased its production by 3%. The most successful industrial output took to take in the Sakhalin and the Yakutia region of 14.4 percent and 5.9 percent growth which has been the incentive in influencing the developmental initiatives in the whole of the Far Eastern Federal District. The investment and the progress of the five of the nine Far Eastern regions experienced a slowdown in the financing: Khabarovsk Krai, PrimorskyKrai, Yakutia, Chukotka, and Kamchatka. The PrimorskyKrai had the most disappointing result, and here the investment dropped by 7 percent. In total, almost all these five regions and downturn financial performance but only the four raw material producing region helped the investment to increase for the whole of the RFE (Turovsky, 2016).

The Far East federal district also has to deal with structural challenges, like for example the federal districts heavily rely on the energy revenues for its economic growth. And there is no evidence as such if any other sector could reduce the negative impact of small investment or have lead to any positive effects. The agricultural industry of the federal district such as PrimorskyKrai, Khabarovsk Krai, Amur Oblast, and the Jewish Autonomous Oblast had a decline in the production, and these regions had the higher production of agriculture and farming in comparison with other regions. The Amur region and the Jewish autonomous region had a severe decline in the field of farming and agriculture. Concerning the north of the country of the RFE, the southern part only specializes in the agricultural sector and agriculture. Some of the regions were also adversely affected by the unstable business atmosphere, for example, Chukotka region. The agricultural sector had a downfall due to the construction industry in this region (Turovsky, 2016).

There have been Social issues along with economic matters in the RFE. The migration problems in the region have been increasing day by day. The outflow from the regions of the RFE has been growing in the recent times. Mostly the climate of the RFE is harsh; therefore rarely people migrate to live there until and unless there is some economic benefit or political benefit. There has been negative migration balance in the Far East Federal District. The population in the Far Eastern region has been shrinking since a while due to many factors, but some areas, in particular, have suffered depopulation worse than the average rate. The Magadan Oblast in the Far Eastern Federal District stands out among all Russian federal subjects. The highest drop took place in the year 1991- 1996, after the collapse of the Soviet Union. These people have moved to a better place where they could find employment. But the process has continued relentlessly ever since (Pereltsvaig, 2014). The overall outflow migration intensity remained unchanged, except only one region, Khabarovsk Krai, which represented the highest population decline rate within the above mentioned period.

In spite of all the issues in the developmental projects, there has been a positive impact on the real income of the population in the recent times. Although the economic recession of Russia had in fact affected the plans to develop the Far Eastern regionbut, on the contrary, the Far Eastern Federal District shows positive signs of industrial growth in the recent times along with investment dynamics (Makarov, 2016).

The incomes of the people were stable for an extended period indicating that some regions overcame the challenges of the developmental projects. The real income was not consistent in the whole of the RFE, but at least none of the region experienced a significant decline in the income. Only two regions, Amur Oblast and the Magadan Oblast experienced a drop in the revenue but less than the decline in Russia.The level of prices and goods in the RFE was increasing day by day due to high transportation cost. The price of the food increased same as the national indicator. The people who

suffered from these changes were the people who lived in the remote parts of the RFE. The transport facility in the Far Eastern region is inferior; it is mostly developed in the southern zone of the region. The parts of the south are the Sakhalin region, Primorsky territory and the Khabarovsk territory. The main transport route, the largest sea and river ports and the airports are located here (Davis, 2003).

Remote interior places like Kamchatka and Chukotka suffered the most. The Magadan oblast was deeply affected regarding trade and income. There was also rise of unemployment in some regions of the RFE. The increase in unemployment in the Jewish autonomous region and the Yakutia region has structural issues. The investment slowed down in some parts due to various reasons and this lead to the major unemployment crisis.In real contrast to that, the unemployment rate did not exceed 4% of the workforce in Kamchatka, Chukotka, in the Magadan Oblast. The negative impact of declining federal investments and limited access to finance created significantly more binding constraints in comparison with any other challenging factors, such as tax collection or revenue administration. The regional fiscal policy has some positive implications, as evidenced by the relatively high growth rate of local consolidated budget revenues which was 15% compared to the total amount of 6% within the whole country (Turovsky, 2016).

There was insufficient finance by the federal system, and it was affecting the business environment. Therefore, the Russian government started to invest in new development and investment projects. The purpose was to establish more creative and innovative regions with a self-sufficient economy. However, most of the Far East Federal District regions are not self-sufficient yet and are still dependent on the financial support from the Russian central government. The only exception to this region is the Sakhalin region which is rich in industrial production as it is abundant resource region with oil and gas. The RFE region also has a considerable amount of debt money to be repaid, but despite all these issues they were able to fulfill the economic needs of the people. The growth in the health sector in the RFE districts is

a good indicator of the somewhat self-sufficient economy. According to data by the Ministry of Finance within the period January-October, 2015, compared to the same period in 2014, the regional health budget allocations grew by more than 10%, though in Russia this indicator increased by 5 percent only. Therefore, the growth and budget of the RFE district in comparison to the Russian state the money spent on healthcare are higher (Turovsky, 2016).

To modernize the RFE region, the government has been prioritizing two developmental initiates. First, to strengthen the administration and economic footprints in the RFE and secondly, to enhance economic links with Russia's Asia Pacific neighbors. These two initiatives, in the long run, expect to bring back some life into the struggling economy of the RFE (Hepler, 2012).

To sum up, on the one hand, the Russian Far East does not demonstrate any negative dynamics in its socio-economic development. The region has regained its traditional mineral-commodity focus, and it makes use of the positive effects of the so-called "Soviet inertia." During the Soviet Union period, many projects were left incomplete or were postponed indefinitely, suffering from such factors as lack of demand and distant geographical locations. As a result, most of the recent development projects are rooted in the in the previous Soviet era. On the other hand, the government budget constraint and problems of deficit spending are slowly reducing the safety margin of the Russian Far East against economic and social collapse.

The Russian government is stimulating the region's economic growth by suitable laws and regulations to strengthen its' business environment, but the country authorities limit the region's access to financial services to create in the region some new approaches to business and generate it’s inner financial resources. It should also be noted, that the strategic regional projects and initiatives are not in a position to deliver development profits yet. So far, they still need some time, most likely years, to be further implemented and be able to stimulate economic growth of the Far

Eastern Federal District. It means that for the next few years the Russian Far East is going to face the problem of disproportion between high expectations and challenging business environment and will also have to meet particular challenges to overcome specific inter-regional constraints to doing business in the local business environment is difficult, and it varies substantially from region to region within the broad federal framework of the Russian Far East.

Chapter IV

Combating Environmental Security issues in Russia: Environment laws and Policies in Russia

Russia had successfully carried out major environmental policy reforms accompanying its transition to a market economy. However, Russia still has an economy which is dependent on industry and resource exploitation. The policies and investments of all these years will go in vain if the environmental issues at present are not taken care. There has to institutional and structural changes along with investment in the economy (OECD, 2003).

In spite of vast natural resources, Russia faced massive environmental problems since the days when Russia was an empire. The extraction of natural resources made the region undergo climate and environmental changes later in the century. Poor management of the forest, poor equipment in the industries contributed to the stress and demands of the environment. In this period, finished products were imported to Russia from the United States and Japan due to poor and inadequate industrial productions. The ecological concerns in the 19th century were raised by a group of scientist, zoologist and agronomist who were associated with the Moscow University and the concerns were expressed in the public addressing that environmental issues are realities. Many state leaders from the time of Brezhnev to Gorbachev had undertaken the cause of environmental protections. Initially, the engagement in the environmental issues was like a state corporatist. The Soviet state gradually acknowledged the environmental concerns and placed the issues like pollutions and energy at the forefront. However, the corruptions and the lack of environmental authority made the environmental groups conform to the regime's priorities (Josephson et al., 2013).

One of the first mechanisms to be adopted to manage the environmental issues was to improve the forestry science. The German forestry was known for its efficient

forestry practices, Russian forestry science took help from German forestry since the Russian empire period. The idea was to turn the forest into a factory, where limited forest can be used, and timber production could be maximized. Therefore, in the later period, Russian forestry established national and provincial forestry society to discuss the issues related to natural resources. Soon they approached to bring the scientific management to natural resources to support the international conservation movement (Josephson et al., 2013).

Agriculture was the primary concern of the Russian state in the 19th century. The first step to conserve the natural and extract the natural resources in a limited way was to improve the agricultural sector. Agriculture is crucial because it uses land and also clears forest to cultivate. Later the use of pesticides, fertilizers, herbicides and the hybridization of the crops and animals were started. It was the beginning of the contamination of the fertile land. Soon there were overuses of these fertilizers and chemicals, and land and soil started degrading (Thorntorn and Ziegler, 2002).

The scientists had a huge role in the conservation and preservation of the environment in the Russian empire regime. During the early years of 1900, the scientific and political forces joined to form the first conserve of Russia. They managed to declare some of the vulnerable areas as protected areas. The scientist also joined with the regime during the war times to ensure that Russia is always self-sufficient in raw materials. However, soon after the Russian revolution, the environmental concerns were disrupted. The methods to solve the environmental problems in the present scenario have more certain functions and authority, unlike the Soviet period. Different bodies were created under the ministries to undertake the current situation regarding the environmental issues. Many organizations such as the OECD have mentioned some of the environmental indicators to keep a check on the ecological crisis. To date, the environmental performances of all the OECD countries have been reviewed and environmental information and indicators have been assembled for OECD member countries (OECD, 2003).

Some of the mechanisms adopted by Russia to cope with the environmental situations are as follows:

Environmental quality standards

To determine the standards of the actions and methods in the extraction and exploitation of the environment and the commercial use of the natural resources is a vital part protection of ecology.

It will mandate the level of permissible pollution, and there would be an inspection to check the emissions of greenhouse gasses in Russia, many old and poorly equipped industries would be either replaced or shut it down. Competent environmental and sanitary authority is involved, a competent authority is critical when we want to regulate the environmental policies.

A competent authority can understand the environmental crises and have considerable experience in the field of ecology. Most standards are based on the zero risk of human health, and the quality of water, air, soil, and food. The need to check the quality of food and ensuring that the public gets quality foodstuffs has become a necessity.

Hygiene standards were created to monitor the working environment. Certain working conditions in certain sectors are not adequately equipped to address the health purpose. People working in the coal mines or the nuclear reactor should be given safety measures to work in such conditions. Chemical substances in the air, then in drinking water fishing waters, etc. were regulated. Certain allowable concentrations were only permissible (OECD, 2006).

Environmental assessments

In the recent years, there is no significant progress in the environmental assessments. In Russia due to corruptions and manipulation in the evaluation of the environment is slow and exhausted. There will be an inspection to see if certain areas or industries

try are fit for humans to work without being a threat. The state environmental review still holds the central position to consider or verify any projects. The state environmental review can check the project compliance with environmental rules and regulations.

The decisions are mostly taken by the competent authorities; however, certain non-governmental actors can also carry independent environmental review but at their expenses. This step is useful for the environmental review as these independent organizations would be addressed by experts and will be given an unbiased review. There would be mandatory rules to follow the environmental impact assessment (EIA) for all the large scale energy, industry, and agricultural facilities (OECD, 2006).

Permitting and Emission Limit Value

The permitting or licensing is an essential mechanism adopted to solve the problems of illegal extractions of natural resources. Under certain conditions, certain specific activities on the protected areas are not allowed, and to avail, such resources people have to have a permit or a license. Most of the times, the regulation would be to limit the extraction of the natural resources in a year or the control of pollution emission.

There would be detailed administrative work and an official file to get the licenses and permits. These regulations are going through reforms at present, although only limited changes have been introduced till now.

The license for the use of natural resources have been categorized into specific domain such as the use of mineral resources have its own set of regulations and boundaries for geological studies, industrial extractions and use of the mineral resources for other purposes, etc.

Similarly, for the use of water, soil and forest resources, there are special permits and regulations. Water permits comprise of data on the water bodies, consumers of the water bodies and the way and the purposes of using the water bodies are to be clarified beforehand. Information about the intake of water and water use limits are to be specified. Forest recourses are the most vulnerable of the natural resources. The documents on the use of forest resources are – license, felling permit and the permit to use the forest land. Sometimes it can be a long-term lease to use the wood stock or the forest resources. The soil protection licenses are about the soil uses, for example, agrochemical to check the use of fertilizers and the toxicological, environmental surveys to test the toxicity of the soil and the monitoring of the fertility of the land (Helmer, 1997).

The use of the biological resources is a delicate matter. Mostly the biological resources are neglected, and the extinction of various endangered species is on the margin. Only special permits are given to sports hunting and that too only for particular fauna in certain locations. For commercial fishing in the water bodies, permit or license is mandatory. The license also limits and regulates what kind of fish and bio-resources are caught. The license also restricts the type of fishing devices used and the time frame also; mostly in breeding season fishing is not permissible (OECD, 2006).

Environmental performance ratings

Several rating agencies have been active since 1999. The ratings on the territories, sectors of the economy and the personal natural resources users, have been used more frequently in Russia. Currently, there are several rating agencies such as the nongovernmental organization, social and ecological union, the information and analytical agency, etc. these agencies use different techniques and criteria to assess the performances of the various sectors which are depended on the natural resources. However, the methods and the criteria used are not transparent enough to rely on its

data. It also not clear whether such ratings do matter or not in the environmental protection, however, it is shown in the international experience that such ratings do help in the efficiency of the large industries because it gives them incentives. Due to different types of mechanisms adopted in Russia to combat environmental issues, it is likely that some of the methods are quite competent and some of them are quite time-consuming (OECD, 2006).

Environmental liability

The environmental liability is the most developed of all the mechanism to protect the environment. It is a legal doctrine and has helped to address almost all the problems concerning the environmental protections. Most of the policy makers, laws makers, and the public believe that liability helps in controlling the environmental crises. It can prevent many crimes and also moderate the impact of the economic and other factors generating from environmental insecurity (U.S. Congress, Office of Technology Assessment, 1995).

The compensation for environmental damage by industries, institutions, destruction of natural resources, or mismanagement of natural resources is to be taken seriously by the authority. The loss compensation is usually settled in the court or voluntarily by bearing in account the losses incurred. This is one of the best measures taken to combat environmental crimes. The environmental crimes instigate more corruptions in the office and the more strain on the environment.

Economic instruments of environmental protection

The economic mechanism of the environmental security is one of the most effective ways of undertaking the environmental crises. Some of the methods are incentives, while other is a coercive tool. Environmental charges and tax are the most common way of a coercive method to make people limit their environmental exploitation. Fines are imposed for violation of environmental laws, and on the environmental

offenses, damages and these charges are effective ways to protect the environment (Panaiotov, 1994).

The Environmental issues during Soviet period and the methods to undertake the Environmental problems

The biggest issue during the Soviet era was the economy, and with economic matters comes the environmental issues. After the two world wars and the long period of cold war, Soviet Union's economy was slow and inactive. Competition with the west made it worst. The participation in the costly and destructive wars and the 'arms race' proved expensive for Russia. The rise of the anti-communism and the military exercise to extend the communist hegemony in the Eastern Europe was the only focus in the early period of 20th century. Apart from political aspirations the next concern was the economy and to manage the country's economy, with the development of the industries and investments (Birch and Mykhnenko, 2010). They tried to recover the economic downfall through massive developmental projects. There was also the nuclear race with the west and insecurity regarding the military attack and border issues. Along with border comes the water sharing and food security for the citizens. The biggest problem during the events of perestroika and glasnost is the environmental problem. The environmental policy was the primary concern of the Moscow, as it had become significant not only to the Soviet Union but for the world as global ecological concerns. These concerns reached the 'civil society' and the environmental groups which started questioning the policies of the USSR (Bowers, 1993).

Gorbachev was the president from 1985 to 1991, USSR. He was passed on the legacy of the Soviet Union and had to deal with many concerns such as the slow economy, rise of nationalism, environmental problems, nuclear issues, cold war, and anti-communist upsurge, etc. The turning point of the environmental concerns in Moscow came after the Chernobyl nuclear incident in 1986. This event raised the

issues of secrecy of military projects and the tendency of the Kremlin to reveal little about sensitive environmental issues and concerns (Bowers, 1993).

Soon after the rise of environmental concern groups and international attentions, Gorbachev declared Glasnost and Perestroika as the first significant steps to engage in Environmental concerns. The Chernobyl incident had gathered a lot of international attention and to deal with these issues, Gorbachev provided a substantial amount of information to the cause and the cost of the nuclear incident. In the aftermath of these declarations, there was much dialogue on the environmental issues, and the various environmental groups, intellectuals, scientist, economist, etc. joined the debate on environmental concerns (United Nations, 1997). It gave rise to the green movement in the USSR. Glasnost and perestroika according to many contemporaries will not only help in finding effective ways to improve the environmental issues but will also give a new spirit to call for 'single state ecological policy' and the increase the participation of the citizens and make public aware of the significance of the environmental concerns.

One of the most favorable developments during the Soviet period was the protected lands known as *Zapovedniki* and *zakazniki*. In fact, after the disintegration of the Soviet Union, this system of protected lands has been positive, more than 35 national parks have been created, and more lands have been preserved. The financing and management of these lands have been a challenge to the government, and there also have been significant mismanagement of the budget, because some of it was done in a fast manner (Henry and Douhovnikoff, 2008). Also, the budget has been small in the recent times, as it has gone 20 percent to 40 percent low. Allocating money for the environmental purpose was of least concern for Kremlin. Small budgets do contribute to the management of the staffs in an organization and also monitor problems. However, it exacerbates problems of poaching and illegal timber harvesting in the long run.

Although the institutional and legal factors can bear the blame for the poor performances of environmental protection, there are other factors such as political instability and economic crisis which contribute to the failure of some of the policies and regulations. Some of these factors are unpredictable and therefore cannot guarantee a 100 percent performance (Acemoglu et al., 2003). It is a hindrance to the long-term plan regarding the environmental protections. In the 1990s, the major problem concerning environmental laws and regulations were; it followed the western model to resolve the environmental crises. With the different political system and different mechanisms to deal with environmental issues, the prototype of the west did not suit the Russian society. Russia also has additional institutional problems such as corruptions, shadow economy, interest groups, lobbying, and lack of involvement of the public in the decision-making (Denisov, 2010).

The Environmental laws and Policies after the Disintegration of the USSR

The job of Environmental protection in the Soviet period was divided between 15 ministries, and they were responsible for different economic sectors. Of course, the Chernobyl nuclear incident made the huge difference in the debate on environmental concerns; it opened up intellectual and scientific discussion on environmentalism. The glasnost and perestroika had also exposed many of the mismanagements by the government on environmental policies. The year 1988 is in particular significant for the environment because the state committee on environmental protection is also known as Goskompriroda was created to review all the new projects on development and industries. Only after the collapse of the USSR, the environment was given importance (Robinson, 1988).

The first thing that the Russian state did after the disintegration of Soviet Union was the creation of the 1991 Federal Act on the Protection of the Natural Environment and the promotion of Goskompriroda to the ministry of environment. This step was important because it gave an organization particularly to deal with the environmental

issues and concerns in Russia (Zaharchenko, 1990). Although most of the commitments were rhetoric in nature, the principle to maintain sustainable development was developed in the early 1990s. From 1991 -2000, there was an inadequate bureaucratic system and the lack of human resources to manage the environmental crises, the lack of institutional authority and the poor coordination between the authorities and its subordinate bodies, made the protection of the ecology difficult. The worst kind of obstacle that the environmental policy and regulations face is the lobbying by the powerful and wealthy industrial groups. These groups have the power to influence the policies and bend the laws for them. Corruptions in these situations are common and rampant (Nelsen and Evans, 2015). The nexus between the industrial groups and the authority has proven to be fatal for the environment. Another reason for the state to ignore the environmental issues is the pressure of economic development and to compete with the west. The reason for such instability is the regime change. Every time there is a change in the administration and authority, there would be changes in laws and regulations in every aspect including environmental policies and legislation (Pereira, 2015).

The Environmental Priorities in the 1990s

Generated new and drew attention to the old problems of environmental regulations. There is the need for greater diversity in the community to regulate laws to make the public involvement in the law making policies. Issue such as lobbying by different groups to get access to exclusive privileges was widespread in Soviet Union period. There has been low attention to the environmental problems and the enforcements by the laws. Also, the reduced environmental performances and a major violation of environmental rules and legislation have been widespread (Ridgeway, 1990). The complex legal framework and the unstable political system have made the pace of the government concerning environmental issues slow and stagnant. Poor economic conditions and ineffective economic reforms are also adding to the environmental concerns. Society after such a transition and turmoil has lost faith in the fair

regulations of the system to make the environmental concerns a priority. The inefficient system with economic scarcity and human resources are also one of the major concerns of leading causes of low performances in ensuring there is environmental compliance to the laws and policies (NIC, 2011).

Yes, the economy was always the priority of the USSR. Even after the disintegration, the economy has been the number one issue of the new regime. The consequences of the fall of the USSR were massive. Rationing, shortages of food and other essential requirements, endless queue to get access to scarce goods, etc. made the people intolerant and angry. The fruits of such transition and policies are slow and steady. The 1990s also experienced the rise of political force such as privatization and liberalization. The Neoliberalism in Russia was adopted entirely by President Yeltsin; the policies adopted by his administration were followed by his successor. Many of Yeltsin's policies were associated with the energy sectors. The market was open for the export of oil and gasses in the neoliberal period (Josephson et al., 2013). The 1990s was also the time of Privatization in Russia; it had affected the economy in different ways. While in principle, the privatization was a good effort to modify the crumbling economy. However, the only problem was that the means through which it was executed was challenging, the liberated system was questioned, and the perceptions of economic agents were considered flawed (Aven, 2013). After years of Cold War, the Soviet economy was weakened; the exploitation of the natural resources was viewed as an essential way to regain the economic growth, to give job security and also for national security. Thus, efforts to regulate such exploitations were seen as impediments. Post-war decades, Neoliberal ideology had captured most of the western countries, Russia too adopted Neoliberalism to regain the economy of the country. Neoliberalism has transformed itself from ideology to a dominant political force. This period was the era of environmental awareness around the globe (Hill, 2007).

Since 1991, many environmental groups have arisen in Russia. These groups have emerged due to the policies and changes by Gorbachev. However, they were varied in their attitudes toward problems of environmental issues. Some of the groups have their roots from the *'The Russian Society for Conservation of Nature'* that started in 1924 (Zaharchenko, 1990). Many of the Environmental committees were abolished under the Putin's regime, and the regulatory activities of these environmental committees were placed into the 'Ministry of Natural Resources' in 2000.

There has been an escalation of depletion of the environment during the Neoliberalism period in Russia. Neoliberalism, in fact, did not help in reduction of environmental problems. With the open market, there has been more competition and more boost to the economy and the less care about the environment.

Special laws and Policies for the Protection of Environment and Natural Resources-

There is abysmal communication between the ministries and their subordinate bodies; this has affected not only the institutional framework but also the management of the environmental issues. Many of the ministries have been given or assigned specific functions, such as Ministry of Health and Social Development, Ministry of economic development, the department of civil defense including emergencies and natural disaster mitigation were also created specific to environmental issues and concerns. Ministry of agricultural and its subordinate handle the production of agriculture enough to sustain its population. The activities of all these federal bodies and organizations are coordinated and designed. It is based on the Russian model of development, and social development is given equal importance. The implementation of such plans is governed and developed by the Russian government (OECD, 2006).

Issues specific laws have been registered since 2000. In Russia, the aim for such special laws was simply to protect the vulnerable and to protect the particular area which has specific environmental impacts. For example, the protection of Lake Baikal is utmost important, due to the waste mismanagement the lake has been unfit for consumption and the water has been contaminated (Thomson, 2008). Many issues specific laws have been created to address such significant environmental concerns.

- Federal Law "On the Territories for Traditional Use of Natural Resources by the Aboriginal Small Peoples of the North, Siberia, and the Far East of the Russian Federation" passed in 2001 (OECD, 2006).

The law is noteworthy as its goal is beyond the protection of the environment. The protection of the native habitat and the traditional use of the natural resources were only allowed with this enactment. This concept was first coined with the intention that the traditional lifestyles of the small people would be preserved and to develop their original culture. This law also will conserve the biodiversity in the territories, and these natural resources can be only used in the traditional form. Initially, this law faced particular difficulties in enacting it. The authorities have been slowly delimitated, and they have legally marked the territories permissible for the traditional use of the natural resources (Arakchaa and Sumina, 2016).

- Federal Law “On Fishing and Conservation of Biological Water Resources” of 21 December 2004 (OECD, 2006);

The maintenance of the water bodies is one of the most important aspects of environmental protection. The contamination of water bodies has become a major concern. There is the shortage of clean drinking water in some parts of Russia, and the water-borne diseases have been on the rise due to chemical exposure to the water bodies. Extractions of marine resources are also a significant threat to the environmental security, the biodiversity is in danger due to exposing to radiations, waste and oil have in fact polluted the seabed, and the deterioration of the quality of water is the main worry of the authority.

- Federal Law “On Earmarked Environmental Programs for Rehabilitation of Radioactively-Contaminated Areas” of 10 July 2001; Federal Law “On Social Protection of Individuals Exposed to Radiation as a Consequence of Nuclear Tests at Semipalatinsk Testing Ground” of 10 January 2002, and Federal Law “On Social Protection of Individuals Engaged in Work with Chemical Weapons” of 11 October 2000 (OECD, 2006).
-

The first instance of an unfortunate nuclear accident in the Soviet Union was the Chernobyl incident in 1986. This event generated a lot of international attention. Along with the Bhopal gas tragedy in 1984, Chernobyl incident is the worst form of anthropogenic environmental event. However, only after confirmation by the power station that several first responders died in the facility itself after they tried to contain it, the rest of the populations were shifted (World Nuclear Association, 2016). Slowly the radiation started to spread, and workers, residents and other employees of the reactor were either exposed to radiation or died in the following days. Federal laws are very necessary for the safe working environment for the workers. It is also a part of human rights to provide safe working environment if they work in high-risk sectors such as mining or nuclear reactors, they are involved in hazardous work (WHO, 2001).

- Federal Law “On Quality and Security of Foodstuffs” of 2 January 2000 (OECD, 2006);

The quality of foodstuff has become a necessity for the Russian authority. As there are incidents in which stale meat was frozen and distributed in remote places of Russia. Due to contamination of soil, water, and dangerous radiations, there have been food shortages in some parts of Russia. This law on food quality and food security is a vital part of the environmental management that will help to curb hunger (Bobylev and Perelet, 2013).

There was certainly another environmental doctrine that was although not real policy targets but still right objectives to protect the environment (OECD, 2006). These

policies made a shift away from the vagueness of previous policies on environment, they are-

- Eradication of past pollution industries and developmental projects and replacing with the environmentally-friendly territorial planning;
- Reduction in the resource and energy used in the production and then 'greening' of the industries by installing new machines and eradicating old factories. This will help the productions and the outputs in the global market also (Bobylev and Perelet, 2013).
- The conservation of Biodiversity and the rehabilitation of distressed territories such as Lake Baikal area, Aral Sea area or the radiation exposed areas (Kalikhman, 2012).

The following policy interventions are highlighted by the Environmental Doctrine of 2002:

- The Reforming of the environmental quality standards and to impose the emission limit on the industries.
- The procedures and criteria for environmental assessments were improved and enhanced with better ideas, and the best available techniques were adopted. There were developments of tools which were used for environmental zoning to protect such specific areas.
- Many incentives were offered such as economic incentives; there are also applicable fines and penalty charges if the environment is damaged in the process of production. This will help the performances of the industries, especially the bigger industries. The efficient uses of the public finance for the environmental projects were given greater emphasis, and for the environmental noncompliance, there is the substantial penalty (OECD, 2006).

There have many criticisms that the implementations of such environmental doctrine have been slow and not progressive. This concern was raised at the national conference held in Moscow in November 2005. Many experts joined the discussion

on the environmental issues and concerns. The federal government and the local governments also came together to be part of the conference on the environment. Other participants such as the researchers, scientist, NGOs, leaders of large enterprises also came forward to identify the main concerns and obstacles of the environmental managements in Russia (Dresen, 2011). As a result of an intense discussion on the ecological crises, the members of the meeting came to the findings that there are certain areas to be taken care of, which includes-

- There is the lack of a single authority who will undertake the responsibilities of environmental protection. The process of policy making is fragmented, and therefore, poor governance on the part of the authorities is making the implementation the environmental policy a little sluggish.
- Environmental criteria are inadequate in assessing the progress of environmental progress and the methodologies used to check the effectiveness of the policies and regulations. One important aspect of environmental protection is the participation of the people. The public should be involved in the decision-making; it is a missing mechanism that should be adopted by the Russian administration (Wernstedt, 2002).
- And lastly, the inadequate training and lack of skilled staff in the system has made the process of environmental cleanup slow. Most of the employees would not have any idea about the environmental issues and the scientific understanding of the degradation of the environment. It is imperative to educate the staffs on environmental management skills to work efficiently.

To give impetus to the implementation of the Doctrine, the following measures were proposed:

- Improve the institutional framework; there should be set of norms, rules, and procedures to make the institution more efficient. People who are in service position should be trained to manage environmental issues. For example, visit a field, meet farmers, hold meetings with entrepreneurs, dialogue with the local administration, etc.

- Raise environmental awareness, and awareness is the utmost necessity to make people realize the critical environmental problems. Different institutions, government, and nongovernmental organizations can join hands to educate people on anthropogenic issues. Environmental education will also help to develop the ‘environmental problems' as a discipline and improve sensitivity in people. The need for public support is essential since proper management of the regulations and laws would need the cooperation of the citizens for better environmental governance (UNDP, 1992);
- The present environmental laws and regulations should be aligned with the international standards and principles. This will help to raise the standards of the environmental laws and amend it. Stricter and tough laws are required to undertake the different ecological crises.
- Public funds should be provided to address significant past pollution to clean up the environmental failure. Investments should be welcomed to implement environmental projects.

Significant changes in the institutional framework of Russia and its impact on policies

In Russia, the reforms of the environmental managements appear to be very difficult because Russia had structural changes after the 1991 disintegration. The institutions in Russia have faced many criticisms concerning corruptions and lack of authority. In the recent years, after the ecological crises have been brought to notice, different environmental agencies and groups have been restructured, and there have been changes in the leadership and regimes (Wernstedt, 2002).

The Russian government has been trying to reorganize the executive environmental authorities and finally did it in 1994, 1996, 2000 and 2004. The government constantly looked for an ideal power to cope with environmental crises. This did not help the policy makers or the government to organize the environmental policies. The law making agencies, for example, is the most stable institutional framework of

the government (World Bank, 2004). The president, the ministers, the federal assembly, the supreme court, etc. are the actors in the law making process. This diversity in the law making process makes it more efficient to balance the interest of all the sections while making laws and regulations.

Although there might be some fragmentations in the in the framework, it will be a positive aspect of environmental policy. The executive branch of the institution has also gone through considerable changes in the recent past. The responsibilities have been mutually and collectively shared along with the federal subjects and the sub-national subjects (oblast) to ensure effective regulations on environmental issues. These changes are a vital part of the mechanisms to deal with the anthropogenic issues in Russia. There were performance-oriented budget planning to inspire and motivate the coordination between the institutions and the industrialist. There were specific resources for different goals and responsibilities, assigned by the ministry of finance (OECD, 2006).
The performance-oriented approach is attracting wider recognitions because it leads to transparency and there would be public accountability.

At present Russia is signatory to some of the treaties in bilateral relations, and other environmental treaties-

- The agreement on the cooperation in the field of environmental protection with the government of the Finland signed in 1992.
- Treaty signed with Finland on cooperation in combating pollution of the Baltic Sea, signed in 1989, and this treaty was signed after many accidents involving oil and other chemical substances in the Baltic Sea.
- The agreement for the control of the air pollutants, by limiting and reducing the harmful effects of the air pollution in the areas near the shared border of the Finland and Russia was signed in 1989.
- The treaty to conserve the protected areas by establishments of the mutual friendships in was signed in 1989

- To protect the marine resources in the Baltic Sea and other areas which are in the border area of Finland and Russia, the treaty was signed in 1992.
- An agreement was signed in 1993 for the implementation of environmental projects in some regions of Finland and Russia, like in St. Petersburg, Novgorod and Piskov and the region of Karelia (Ministry of Environment Sweden, 2017).

The above mention treaties are just some of the bilateral agreements between Russia and Finland. Here, it can be observed that in spite of being a small nation Finland has equal environment agreements.

However, there are other international treaties that Russia is a signatory and observant. Some of the treaties that Russia is party to are- Nuclear Test Ban, Ozone Layer Protection, Air Pollution-Nitrogen Oxides, Law of the Sea, Air Pollution, Antarctic Treaty, Endangered Species, Climate Change-Kyoto Protocol, etc. Kyoto Protocol in the recent times was an important treaty that Russia ratified too. Initially skeptical about the agreement, Russia bargained for economic benefit for the consent (Sills et al., 2000).

Russia participated in many of the international conferences around the globe. One of the important conferences was The United Nations Conference on Human Environment in Stockholm in 1972, played an essential role in the emergence of the United Nations Environment Programme (UNEP). It was followed by many other conferences on the environment, the International Conference on Environmental Education at Tbilisi, USSR in 1977 was held to make some objectives and principles for the development of the environmental awareness and education (United Nations, 2017).

Russia participated in the Biodiversity Convention as part of the Earth Summit in Rio de Janeiro in 1992, the convention had three goals including; the diversity of the natural is to be conserved, the sustainable use of the resources, and the fair and equitable sharing of the resources. This convention was the earliest convention to

address the sustainable development issue (United Nations, 1992). In 2010, the recent conference on Biological Diversity was held in Nagoya in Japan, and the Nagoya Protocol was adopted.

The Antarctic- Environmental protocol also known as the Madrid Protocol was an important treaty for the protection of the Antarctic environment and its related ecosystems. Some of the notable quotes from the article of the protocol are that it shall be a punishable offense if anyone extracts mineral resources for other than scientific purpose would not be entertained. However, this was in contrary to the previous regulation on mineral extraction which allowed the control and taxed activities on these areas. This protocol also made some special law regarding the tourist activities.

The Vienna Convention on Civil Liability for Nuclear Damage was held in Vienna 1963, and this convention undertakes the liability issues that come from the nuclear accident. Most of the fatal accidents are from the nuclear disasters, till 1963 the most shocking nuclear disaster was the bombing of the Hiroshima and Nagasaki cities in 1945. This protocol was amended in 1997 by another protocol. And the depository was the atomic energy department (World Nuclear Association, 2017).

One of the other major environmental disasters that occur is the oil spill in the water bodies. The international convention on the civil liability for the oil pollution damage was signed in 1969 but renewed in 1992. This international treaty was adopted to ensure the victims of the ecological damage and compensate them adequately. Mostly, the disasters on water bodies are due to the sea commerce involving the tankers such as cargo ships that carry oil.

The Impact of Kyoto protocol on Russia, its significance, and consequences-

The Kyoto Protocol signed in 1997 Japan is an important conference on climate change.

The aim of the protocol was to cut the carbon emissions around the globe. Many developed nations signed the treaty and tried to control the emission of greenhouse gasses. Russia is not a signatory to the treaty in the first round. However, Russia did participate in the first commitment period (UN Framework on Climate Change, 2014).

Russia tried to gain economic benefit from the treaty, as Russia is blessed with enormous natural resources it didn't feel the urgency of the environmental issues in 1997. Therefore, it delayed in its consent to the treaty. The Economic benefit is the only thing that matter to any developing country. Russia wanted assured investments in its territory if they cut down the carbon emission. Russia also intends to sell the surplus carbon emissions as carbon credits. The Kyoto Protocol was not a reality because Russia didn't approve in 1997 (The Guardian, 2004). Russia responsible for 17.5 percent of the global emission in 1990 and therefore, according to the regulations of the Kyoto Protocol, it must be a signatory to the treaty. The goal of the agreement is to reduce the global emissions by 5.2 percent from the 1990 levels by the year 2008 and 2012. Some countries have to reduce in a lesser quantity due to its minor contribution to the greenhouse gasses. For example, Japan has to reduce by 8 percent and Canada by 6 percent only. The treaty mentions explicitly the six types of gasses that are harmful to the environment. They are carbon dioxide, nitrous oxide, methane, sulfur hexafluoride, per fluorocarbons, hydro fluorocarbons. The greenhouse gasses involve these six categories of hydrocarbons (Chandler and Popov, 2003).

Many developed countries like USA and Australia have not signed and withdrew from the protocol. They said that it did not go with the interest of their nation. This also de motivated Russia not to give consent to the treaty. Russia, on the other hand, didn't sign in 1997 but assured that in 2002 climate conference in Johannesburg they would ratify. However, the close association of the president said that Russia is demanding investment guarantee. Russians have quite a benefit from the protocol as

they have already down by 20 percent of their carbon emission and can sell their emissions credits. There are other advantages for Russia if they ratify the Kyoto Protocol, they can earn the trust of the EU, and can make easy money for its government by the sale of the emission credits. One important aspect of the signing of the treaty is that Russia still is struggling with the economy. The dependent on the exports of oil, natural gases, and other resources are high. Therefore, before the ratification, Russia did demand some economic benefits from the treaty. Finally, in September 2002, Russia ratified the Kyoto Protocol (United Nations, 1998).

Putin's administration and the environmental situation in Russia

The debate on environment faded as time passed and Putin's Presidency era came (Peterson and Bielke, 2001). In comparison to the perestroika period and the subsequent period, nowadays in Russia environmental concerns and discussion have faded and has become irrelevant and less politically significant. According to survey and studies (Dunlap, 1998) citizens of Russia appears to be less concerned about the environmental issues than do those of western countries. For the Russian citizens, environmental issues and concerns are pronounced as personal concerns about the well being of their health.

Putin carried out liberal economic reforms; there were smashing of trade unions, tax reductions, rising rents, privatization, and deregulations (Rutland, 2013). Here, Freedom from regulations also means the freedom to do what is best for the business and economy but disastrous for the environment. Freedom from rules can also mean the freedom to poison rivers, freedom to cut trees in the name of agricultural outputs and development since there would not be any regulations.

There is no proper execution of the rules and the laws that have been established. Russia has a comprehensive legal framework to deal with environmental problems but lacks the authority and the capability to enforce such legislations. Most of the

environmental challenges of Russia are the legacy of the Soviet past. The campaigns such as ‘‘solve the food problem" led to the overuse of the fertilizers and pesticides making the arable land infertile and damaged. There was no waste management system, a lot of abundant resources were considered as free and led to waste. The Russian public at present would prioritize the socioeconomic needs over the environmental improvement; even though the environmental condition is deteriorating at a high level (OECD, 2006).

There is the universal agreement that the president of Russia has no intention to put environmental concerns before the economic interests. The fact that Russian economy is immensely dependent on the export of the natural resources, it 's hard to put a hold on the extractions of resources. Oil and gas exports have become the backbone of the Russian economy. These extractions are the most easily exploitable reservoirs, and therefore, they are not sustainable. To maintain the supply of oil and gas, there has to be regular exploitation of the natural resources. One more mistreatment of the natural resources can be seen in the petroleum sector. The hydrocarbons, in general, are commercialized in Russia and around the world. The industrialized countries need oil and gas to run the factories and have used it to its exhaustions (Newell and Henry, 2017).

Russia is a vulnerable country, borders and shares territory with very diverse ethnic groups and these groups have been historically indifferent to Moscow. They might not share the same ideas and values of the mainstream Russia. This is one of the first reasons why Russia needs to hold together its country. Also, most of the natural resources are found in these far territories. Russia has few options to deal with such issues. Firstly, there has to be a reliable, efficient central authority in the administration. Secondly, a good relationship with its neighbors to maintain peaceful coexistent and to create a buffer against other powerful countries and lastly, Russia should take advantage of the natural resources to sustain a balance with the powerful countries. After the failure of the USSR, the energy industry was a mess. The policy

of the energy liberalization adopted under Gorbachev's period was taken too far by Yeltsin in the 1990s. The result was unfortunate, as it killed the production and the energy sectors were dominated by Russian oligarchs and the foreigners (Worldview, 2012).

However, coming to Putin's administration at present, he adopted measures to consolidate the energy sector and brought under the control of the state. Even though Putin advocated liberal policies, he reversed the policies of the previous regimes. Putin nationalized the energy sectors and became more aggressive in the trade with other countries. Putin's administration raised the prices of the supplies and also controlled the trade with individual countries to make political negotiations. In the current situations, the energy sectors and firms that control the energy industries such as Gazprom are under strain because of the lack of competition in the market. The old technologies and unfriendly nature of the foreign investments had made the firm stagnant (Cohen et al., 2014).

There have been ambitious projects in the field of energy sectors, and these projects would need the modern and sophisticated technologies to handle the demand. Several other factors such as environment and locations are also equally important for the energy developmental projects. Corruptions being another major obstacle in the field of energy field are hugely responsible for the loss of revenue and inefficiency in the energy sectors.

Russia by quality is the biggest country with enormous land masses is the world. Divisions such as geopolitics, trade, military, and economy are part of Russia's day to day political participation. The most beneficial part of Russia is that it is blessed with enormous natural recourses. If the natural resources are extracted rationally and sensibly, its recourses can save the half of the world from environmental crises. Natural resources such as oil, minerals, forest, water, animals, marine species, etc. have the potential to resolve many of the contemporary issues including scarcity of

food and water. Today the whole world is at war for oil, gas and other hydrocarbons for the industrial and developmental purpose, shortly the survival of humans would be difficult if the ecological crises are not undertaken with effectiveness. With proper contract and agreement with other countries and with formal diplomatic discussions, the crises can be organized and managed.

Chapter V

Conclusion

When we talk about Environmental security, firstly, we try to explain what the meaning of 'security' is. The concept of environmental security became more popular after the disintegration of the Soviet Union. However, it is complicated to define environmental security as the idea of Security has no meaning of its own. There might be no scholarly consensus on one definition of security, and it is a dynamic concept (Barnett, 2001). Therefore, Security could be understood as the protection from the unwanted threats to life and survival for both humans and non-humans. The definition could vary according to the situation and time.

At the beginning of the study, it was stated that the Environmental insecurities in Russia are the result of anthropogenic activities in nature during the Soviet and post-Soviet periods. The anthropogenic issue is indeed an urgent matter to be concerned. Due to anthropogenic activities, humans are vulnerable to a threat concerning life and survival. Environmental insecurity has created other kinds of conflicts in the world. Some of the significant vulnerabilities that the humankind is facing at the present times are land degradation, water contamination, deforestation; radiations, air pollution, desertification, etc. have affected human and non-humans equally. It has been found in this study that the major insecurities such as Food and Water shortages have affected people in some parts of Russia. The increasing uncertainties have created conflicts and chaos in the world, for example, the war in the Middle East for oil and other hydrocarbons.

In this study, it is found that the economic development has been given priority over the environmental development and security in Russia especially in the Far East of Russia. Although the environmental concerns have been familiar since the disintegration of the Soviet Union the measures to protect the environment have been slow. There is inconsistency in the definition of the environmental security because of lack awareness among the people and the belief that the natural resources are

inexhaustible. The idea of environmental security has been casually used for "Sustainable Development" for a long time since the humankind had initiated the developmental process. However, using 'Environmental Security' synonymously with Sustainable Development is not ideal in principle as the two concepts have different sets of understanding.

Chapter 1 addresses the problem of defining Environmental Security and has proposed few definitions given by different institutions and scholars. As we have discussed in the chapters that there is still no scholarly consensus to define Environmental Security, however, it can be understood as the relative safety from an unwanted threat to life and survival for both humans and non-humans. Environmental security is also linked to many other complementary ideas, and one of the ideas is the notion of *in*security (Pereira, 2015).

It is understood that because of the degradation of the ecology, the awareness of environmental issues has become popular. The environmental security has become an important part of the modern society because we are now challenged with not only fundamental but anthropogenic issues as well. The various insecurities that have emerged and posed a threat to humanity are all results of poor management of policies and laws by the State. Water contamination, soil, and land degradation, deforestation, radiations, air pollutions, health hazards, desertification, migrations, and displacements, etc. have become the primary concerns for all the people around the world.

The findings from this study on Environmental Security suggest that the Soviet Union and the Russian environmental record have been poor. Many decades of Soviet rule left barren landscapes and marine ecosystems, a desiccated inland sea, poisonous rivers, and toxic urban air as a result of seeking industrialization at any cost. Russia and the other Soviet republics responded to the pressures of the decades-long and costly Cold War by developing a defense and production-obsessed

economy amid the ecological destruction. Protecting the environment was not a high priority in Communist countries. Increasing the production of heavy industry and building dams and massive irrigation projects were regarded as more important than clean air and water (Hays, 2008).

The study further indicates that after the collapse of the Soviet Union, the environment was not a priority for the Russians as people struggled to survive and feared to lose their jobs, and conserving environment was the last thing they would imagine. Democracy, the profit motive, and survival are some cases made Russia's environmental problems worse. Putin seems to have been guided by business and political concerns and not environmental ones. While addressing security challenges emanating from the environment includes extreme weather conditions, depletion of natural resources, pollution, contamination soil and land, greenhouse gasses, climate changes and so on while these factors can ultimately lead to disasters, regional tensions, and violence in the world.

In this study, emphasize was given to find out the major causes of failure of environmental laws and policies. It is found that the most because of the weak bureaucratic agency and intense lobbying by industrial groups made it difficult for environmental policies to develop. Therefore, in this span of time, some of the environmental damages have deteriorated beyond repair which cannot be restored back. One of the major mistakes that the Soviet Union committed was the neglect of the environment in the Cold War period. The competition with the West was a costly affair for Russia, and it prioritized economy over the environment, and the consequences are dreadful today. Even after that Russia ignored environment for a long time, from 1991 until 2000, environmental protection officials struggled to be effective in the complex situation. The environmental issues generated by the developmental intervention have geopolitical significance.

The first instance of failure to preserve the environment was the ignorance of modern technology by different regimes in the early centuries. In chapter 2 the goal was to study the Soviet legacy on environmental issues. The findings here suggest that there was a significant lapse in the preservation of the natural resources in the Soviet Union period. The centralized economic system made it difficult for the authorities to execute the laws and policies on the environment. Also, Soviet Union was blinded with the developmental initiatives to compete with the USA therefore; it ignored many of the ecological crises. The involvement in the World War II and the prolonged Cold War made the Soviet Union cripple concerning the economy. The dependent on the natural resources increased during the stagnant economy. The focus on heavy industrialization during 1946-1950, fourth plan, by Stalin made the ecology suffer further. Although the Soviet Union had taken some of the measures to tackle the ecological crisis in the early 1950s and 1960s, these laws and regulations were poorly managed by the weak bureaucratic system (Josephson et al., 2013).

Another major event that made the environment suffer was the Chernobyl accident in 1986. This event made international headlines, and the discussion on the environmentalism became popular. The events of Glasnost and Perestroika followed the Chernobyl accident, and it exposed the cost of Russian economic development which mainly destructed the ecology. Chapter 2 also presented a study on how the degradation of the environment has adverse effects on the human health in general. The climate change, air pollution, nuclear disaster, war, and conflict have a negative impact on the agriculture, economic and the human health. The rise of cancer, infertility and respiratory diseases are some of the examples of acute health crises due to environmental degradation. The contemporary challenges due to the impact of ecological disasters are rising day to day. Some of the present challenges that Russia is facing due to environmental crises are migration, food shortage, pollution, desertification, etc.

The health of the public is one of the primary challenges due to the impact environmental security. However, it is not only the health that is of concern here; the economy of the country has also been severely affected by the lack of environmental security. There is a massive reduction in labor productivity due to illness; it is also deterring many foreign investors to invest in Russia due to fear of liability and costly cleanup of the damaged environment. Another major concern of environmental security is the effect in the regional and foreign politics. Russia being vast in land mass, shares many rivers and natural landscapes with other nations. Russia's environmental issues pose a substantial threat to the neighbors, for example, Russia is the major polluter of the adjacent water bodies, also dumps industrial, chemical and radioactive wastes into the sea. Russia also is the major contributor of carbon dioxide.

Although Russian government cries that it is because of economic and social reasons that they are not able to handle the environmental security concerns. However, in reality, it is their lack of commitment and organizational capacity to address the issue. The foremost concern of the policy makers is to stabilize the economy and the financial markets and not on the environmental impacts of their actions. Spending on the environment was rather negligible; in fact, Soviet Union used to spend more than what Russia is expenditure on the environment.

There is no proper execution of the regulations and the laws that have been established. Russia has a comprehensive legal framework to deal with environmental problems but lacks the authority and the capability to enforce such legislations. Most of the environmental challenges of Russia are the legacy of the Soviet past. The campaigns such as ‘solve the food problem’ led to the overuse of the fertilizers and pesticides making the arable land infertile and damaged (OECD, 2006). There was no waste management system, a lot of abundant resources were considered as free and led to waste. The Russian public at present would prioritize the socioeconomic

needs over the environmental improvement; even though the environmental condition is deteriorating at a high level.

The challenges to environmental security in Russia at present provide us the reality that the environmental issues are not only regional but global. It is not only Russia that has to deal with environmental challenges but also the world as collectively. Several issues like carbon emissions, nuclear testing, etc. are global problems, and the global awareness is essential. Putin administration also made a huge mistake in making the regional institutions responsible for the environmental crises. The short sighted plans of the government had made country dependent on natural resources and therefore, efficient measures such as increased public participation, agreements with the international community for cooperation and integrate the environmental concerns into public policy has become a necessity (Davis, 2003).

Chapter 3 presented an elaborative analysis of Russia's Far East concerning culture, economy, and geopolitics. The focus on the RFE is due to its environment (Newell, 2015).The excitement around the RFE is certainly due to the natural resources that are abundant. It has the most diverse biological region on earth. Its preservation is very crucial not just for the animals and plants but the human population in general. Given the massive forest cover, Russia can tackle most of the environmental issues. While due to globalization and foreign investment the natural resources are capitalized. The international community should, however, ensure that there is sustainable development and to protect what should be protected.

The RFE has the indigenous community that has a history of a clash with the so-called developmental projects. The first sections of people who are affected by the "development" are these natives. Culturally, geologically and environmentally the RFE is vulnerable. This region is considered as the global resource and has global significance. Chapter 3 addresses the specific issues of the Far East of Russia regarding Environment and Development. The importance of the region is not only

for the natural resources but as a strategic location for Russia and the Asia Pacific countries. The relatively weak institutions of the RFE have always made Moscow suspicious about the neighboring countries.

Moscow and the RFE do not always share a warm relationship; they are most suspicious of each other's actions. They share different regional aspirations such as control of the natural resources and maintaining cultural independence from Moscow. The local officials had a considerable amount of power over the regions and acted as a boss in spite of the fact that the institutions are weak in these areas. The regions also compete rather than cooperation. They all want to maintain a "right" relation with Moscow for personal benefits. Therefore, the policy makers that talk and discuss greater collaboration with the Asian countries have to first focus on the relationship with the RFE regions.

The study in chapter 3 also indicates that although the RFE region had some of the big developmental projects such as Sakhalin Energy Projects; the economic recovery as compared to the rest of the Russian states was still prolonged. The economic interaction also at one point of time declined due to many factors. The region's contribution to the industrial productivity has also diminished overall. Also, the demographic change is increasing day by day and shortage of labor force due to migration. Here we can say that due to such negative impacts in the social system of the Far Eastern community there have been conflicts with the natives. Major conflicts between the industry and indigenous people are issues related to water resources.

The RFE has a population of tribes and residents that are still practicing subsistence systems such as hunting, gathering, and fishing with their particular land use practices and patterns. Kinship was the fundamental principle of the indigenous people; however, they did exchange various form of engagements with the non-natives. The policies for the "development" of the indigenous people were the

common perception of the west that native people were to be saved from their primitiveness to survive and become civilized. Therefore, in the Soviet Era, the Soviet Union did try to make the indigenous people like new Soviet individuals who are driven by socialist ideology and industrial development. The intervention in the lifestyle of the natives and the tribes had caused conflicts in the past and the present. The environmental degradation started in the RFE as soon as the so-called "development" process began to take place.

The Russian government is stimulating the region's economic growth by suitable laws and regulations to strengthen its' business environment, but the country authorities limit the region's access to financial services to create in the region some new approaches to business and generate its' inner financial resources. It should also be noted, that the strategic regional projects and initiatives are not in a position to deliver development profits yet. So far, they still need some time, most likely years, to be further implemented and be able to stimulate economic growth of the Far Eastern Federal District. It means that for the next few years the Russian Far East is going to face the problem of disproportion between high expectations and challenging business environment and will also have to meet particular challenges to overcome specific inter-regional constraints to doing business in the local business environment is difficult, and it varies substantially from region to region within the broad federal framework of the Russian Far East.

Chapter 4 presented a study on the environmental laws and Policies in Russia. The research findings say that different mechanisms were adopted to manage the environmental crises since the Soviet era. The Russian scientist and the Russian agriculturist were responsible for many of the mechanisms responsible for preserving the ecology. The forestry science was one of the first mechanisms to be adopted by the Soviet Union. The idea here was to turn the forest into a factory which can be used limited for timber. However, later scientific management was incorporated into this approach and made efficient use of the forest. It was evident that agriculture was

the primary concern under any regime, the improvement of the agricultural sector was an important aspect of socio-economic development in the Soviet Union. The measures that were taken by the Russian government are 1) Environmental quality standards were checked regularly. 2) Environmental assessments were made by different authorities to test the hygiene level. 3) Permitting and emission limit values to check the illegal extractions of the natural resources.4) Environmental liability to prevent crimes and corruptions.

The study in chapter 4 addresses some of the major treaties and agreements signed by the Russian government to cope with the environmental crises. One of the significant agreements was the Kyoto Protocol in the year 1997. Although Russia initially refused to be a signatory of the accord because Russia was not in a hurry to protect its ecology as the environmental issues had a minimum effect in its region but after an economic bargain, the Putin's administration finally ratified in 2002. Also, it was found that there were special laws and policies for the protection of the environment and natural resources. These laws and policies did manage to preserve the natural resources and initiate some environmentalism in Russia.

To conclude, environmental changes are perceived as an important factor in the international politics and discussions. Russia is the biggest country with enormous land masses is the world. Divisions such as geopolitics, trade, military, and economy are part of Russia's day to day political participation. The most beneficial part of Russia is that it is blessed with enormous natural recourses. If the natural resources are extracted rationally and sensibly, its recourses can save the half of the world from environmental crises. Today the whole world is at War for oil and other hydrocarbons for the industrial and developmental purpose, soon the survival of humans would be difficult if the ecological crises are not undertaken with effectiveness. With proper cooperation and agreements with other countries and with formal diplomatic discussions, the crises can be organized and managed.

The study intends to test the following hypotheses.

- Environmental insecurities in Russia are the result of anthropogenic insecurities in nature during the soviet and post-soviet periods.
- Since Russia is currently trying to focus on the development of Far East as part of its Asia-pacific policy, given the environmental issues in this region, the new developmental initiatives may aggravate already existing insecurities of Far East therefore, mechanisms for addressing the environmental impacts is needed.

Relatively the above hypotheses are tested positively. However, the study identified certain areas which need further scrutiny. The study that has been undertaken for this dissertation has highlighted a number of issues on which further research would be beneficial. These includes further investigation on Geopolitics, role of military, environmental laws and policies in the Far Eastern region, the role of multinational companies in the development of the RFE etc. Future studies might, for example, look for solutions for environmental crisis and to manage the natural resources.

References
(*indicates a primary source)

Acemoglu, D., S. Johnson, J. Robinson, and Y. Thaicharoen, (2003), "Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth," *Journal of Monetary Economics* 50(1): 49-123.

*Advocate of Peace through Justice (1922), "*Japan and the Russian Far East*", Advocate of Peace through Justice, 84(12):431-434.

AFP-JIJI (2016), "The Islands at the Heart of Japan-Russia Dispute", *The Japan Times*, [Online Web] Accessed on 13 July 2017, URL: http://www.japantimes.co.jp/news/2016/12/15/national/politics-diplomacy/kuril-islands-strategic-chain-heart-russia-japan-dispute/#.WWuXH4SGPIU

Alcamo et al., (2007), "A new assessment of climate change impacts on food production shortfalls and water availability in Russia", *Global Environmental Change*, 17(3):429-444.

Altshuler, I. I., & Mnatsakanyan, R. A. (1990)"The Changing Face of Environmentalism in the Soviet Union",*Environment: Science and Policy for Sustainable Development*, *32*(2): 4-30.

Anderson, B. A., & Silver, B. D. (1983),"Estimating Russification of ethnic identity among non-Russians in the USSR", *Demography*, *20*(4): 461-489.

Arakchaa, K.D. and Sumina, E.N. (2016), "Environmental Protection and the Rights of Indigenous Peoples in the Russian Arctic: Review of Russian legislation 1990-1998", Biodiversity Conservation Centre, [Online Web] Accessed on 15 July 2017, URL: http://www.biodiversity.ru/publications/arctic/archive/n12/rights.html

Ashwin, S., & Clarke, S. (2002). *Russian trade unions and industrial relations in transition*. Springer.

Aven, Denis (2013), "Russia's Economic Transition: Challenges, Results and Overhang", Yale Economic Review, [Online Web] Accessed on 16 July 2017, URL: http://www.yaleeconomicreview.org/archives/380

Azizian, Rouben (1995), "Russian Far East: With Moscow or Alone?", *New Zealand Slavonic Journal*, pp. 173–183.

Baechler, G. (1998), "Why environmental transformation causes violence: A synthesis." *Environmental change and security project report*, *4*(1): 24-44.

Bagot, Liz and Wilson, Josh (2014), *The Russian Far East Gateway to Asia*, The School of Russian and Asian Studies [Online Web], Accessed on 15 July 2017, URL: http://www.sras.org/russian_far_east.

Baranec, T. and Beskid, J. (2015), "*Is Russia Really a Global Military Power?*, New Eastern Europe, Accessed on 16 July 2017, URL: http://www.neweasterneurope.eu/interviews/1692-is-russia-really-a-global-military-power

Barbanti, Olympio, Jr. (2004), "Development and Conflict Theory", in Burgess, G. and Burgess, H. (eds.), *Beyond Intractability*, [Online Web], University of Colorado, Accessed on 16 July 2017, URL: http://www.beyondintractability.org/essay/development_conflict_theory

Barnett, J. (2001), *The Meaning of Environmental Security: Ecological Politics and Policy in the New Security Era*, Zed Books.

Barton, J. (2004),*Foreign policy between the Russian Federation and European Union in the 21st century* (Doctoral dissertation, University of Cape Town).

Barrow, C. J. (2014),*Developing the environment: Problems & management*. Routledge.

BBC (2003), "Water crisis in Russian Far East", BBC NEWS, [Online Web] Accessed on 16 July 2017, URL: http://news.bbc.co.uk/2/hi/europe/3078502.stm

BBC, Asia-Pacific (2013), "Kuril islands dispute between Russia and Japan", BBC NEWS, [Online Web] Accessed on 13 July 2017, URL: http://www.bbc.com/news/world-asia-pacific-11664434

Birch, Kean and Mykhnenko, Vlad (2010), *The Rise and Fall of Neoliberalism The Collapse of an Economic Order?*, London and New York: Zed Books.

Blank, S. (2016), "Russia in Decline: Russian Writers on the Decline of Russia in the Far East and the Rise of China", The Jamestown Foundation: Global Research and Analysis, [Online Web] Accessed on 16 July 2017, URL: https://jamestown.org/program/stephen-blank-russian-writers-on-the-decline-of-russia-in-the-far-east-and-the-rise-of-china/

Blank, S. (eds.), (2010), *Russia's Prospects in Asia*, Strategic Studies Institute.

Bobylev, Sergei and Perelet, Renat (2013), *Sustainable Development in Russia*, Russian-German Environmental Information Bureau: Berlin-St. Petersburg.

Bowers, Stephen. R (1993), "Soviet and Post Soviet Environmental Problems", *The Journal of Social, Political and Economic Studies*, 18(2): 131-158.

Bozugu, Faruk (2011) "Impact of Pesticides as Organic Micro-Pollutant on the Environment and Risks for Mankind", in H. Alpas et al. (eds), *Environmental Security and Ecoterrorism*, Springer.

Bradshaw, M. J. and Peter, K. (1998) "The Energy Crisis in the Russian Far East: Origins and Possible Solutions", *Europe-Asia Studies*, 50(6):1043–1063.

Bradshaw, M.J. (2013), *The Russian Far East and Pacific Asia: Unfulfilled Potential*, Taylor & Francis

Brain, Stephen (2010), "Stalin's Environmentalism", *The Russian Review*, 69(1):93-118.

Brain, Stephen (2010), "The Great Stalin for the Transformation of Nature", *Environmental History* 15(4):670-700.

Brauch, Hans Gunter (2005), *Environment and Human Security: Towards Freedom from Hazards Impacts*, United Nations University, Institute for Environment and Human Security (UNU-EHS), 2.

Brauch, H. G. (2010), "Four phases of research on environment and security", *Peace Studies, Public Policy and Global Security*, 1: 141.

Brown, Kate (2016), "Chernobyl at 30: How Attempts to Contain the Radiation Failed", TIME History, [Online Web] Accessed on 17 July 2017, URL: http://time.com/4305507/chernobyl-30-agriculture-disaster/

Brundtland, Gro Harlem, et al. (2012), "Environment and development challenges: The imperative to Act." *The Asahi Glass Foundation*, Tokyo

Brunstad, B. (2004). *Big oil playground, Russian bear preserve or European periphery?: the Russian Barents Sea region towards 2015*. EburonUitgeverij BV.

Buckley, Neil (2017), "Russian agriculture sector flourishes amid sanctions", Financial Times, [Online Web] Accessed on 25 July, URL: https://www.ft.com/content/422a8252-2443-11e7-8691-d5f7e0cd0a16

Buszynski, Leszek (1988), "International Linkages and Regional Interests in Soviet Asia-Pacific Policy", *Pacific Affairs*, 61(2):213-234.

Buszynski, Leszek (1992-1993), "Russia and the Asia-Pacific Region", *Pacific Affairs*, 65(4):486-509.

Chandler, William and Popov, Ilya (2003), "Russia's Decisive Role in the Kyoto Protocol", lectured delivered on May 2003 at the Pacific Northwest National Laboratory, No.PNNL-14302, Washington D.C./Moscow.

Chang, Duckjoon (2002), "The Russian Far East and Northeast Asia: An Emerging Cooperative Relationship and its Constraints", *Asian Perspective,* 26(2):41-75.

Clark, W. A. (2003), *Russia's Far East: A Region at Risk*, in Thornton, J. and Ziegler, C.E. (eds.) Seattle: University of Washington Press, 2002.

Cohen, A., Benovic, I., & Roberts, J. (2014), "Russia's Avoidable Economic Decline", *The Heritage Foundation*.

Cudworth, E. and Hobden, S. (2011), "Beyond environmental security: complex systems, multiple inequalities and environmental risks. Environmental Politics", *Taylor and Francis* 20 (1):42-59.

Cudworth, Erika (2003), *Environment and Society*, Routledge Introductions to Environment: Environment and Society Texts, Routledge.

Cultural Survival (2014), "Who are the Indigenous Peoples of Russia?",*Cultural Survival.org,* [Online Web], Accessed on 14th July 2017, URL:https://www.culturalsurvival.org/news/who-are-indigenous-peoples-russia.

*Dag Hammarskjold Library (2017), "*UN Documentation: Environment*", United Nations, [Online Web] Accessed on 17 July 2017, URL: http://research.un.org/en/docs/environment/conferences

Dalby, S. (2007), "Ecology, security, and change in the Anthropocene", *The Brown Journal of World Affairs*, *13*(2): 155-164.

Dalby, S. (2013), "Global environmental security", *The handbook of global climate and environment policy*, 163-178.

Dalby, Simon (2002), "Security and Ecology in the Age of Globalization", *ISUMA: Canadian Journal of Policy Research*, 8:95-108.

Dalby, Simon (2003), "Environmental Insecurities: Geopolitics, Resources and Conflict", *Economic and Political Weekly*, 38(48):5073-5079.

Dalby, Simon (2007), "Ecology, Security, and Change in the Anthropocene*", Brown Journal of World Affairs*, 13(2): 155-164.

Dalby, Simon (2007), From Environmental Security to Global Resource Conflicts (And Back Again), Carleton University Paper for the Swiss peace Conference on "Environmental Peace building" Bern, 13 November 2007

Davis, Sue (2003), *The Russian Far East: The Last Frontier?*, London and New York: Routledge.

Denisov, Dmitry (2010), "Business lobbying and government relations in Russia: The need for new principles", *Reuters Institute for the Study of Journalism*, University Of Oxford.

Dixon, Thomas Homer (1994), "Environmental Scarcities and Violent Conflict: Evidence from Cases*", International Security* 19(1): 5-40.

Dixon, Thomas-Homer and F, Thomas (1999), *Environment, Scarcity, and Violence*, Princeton University Press.

Dresen, Joseph F. (2011), "Economic Growth and Environmental Security in Russia", Wilsoncenter.org, [Online Web] Accessed on 16 July 2017, URL: https://www.wilsoncenter.org/publication/economic-growth-and-environmental-security-russia

Duchatel, Mathieu et al., (2016), "Eurasian integration: Caught between Russia and China", European Council on Foreign Relation, [Online Web] Accessed on 17 July 2017, URL: http://www.ecfr.eu/article/essay_eurasian

Duncan, Jennifer and Ruetschle, Michelle (2001), "Agrarian Reform and Agricultural Productivity in the Russian Far East", *The Rural Development Institute (RDI),*Seattle, Washington.

Falkenheim Meyer, P. (2000). Sino-Russian Relations Under Putin. *Burnaby: Simon Fraser University CANCAPS Papier*, 24.

Falkner, R. (2013),*Global Environmental Security, in The Handbook of Global Climate and Environment Policy*, John Wiley & Sons Ltd: Oxford, UK.

Feldman, David L. and Blokov, Ivan Pavlovich (2009), "Promoting an Environmental Civil Society: Politics, Policy, and Russia's Post- 1991 experience", *The Policy Studies Organization*, 26(6).

Floyd, Rita (2008), "The Environmental Security Debate and Its Significance for Climate Change", The University of Warwick.

Fortescue, S. (2016), "Russia's economic prospects in the Asia Pacific Region", *Journal of Eurasian Studies*, *7*(1): 49-59.

Fortescue, Stephen. (2016), "Russia's Economic Prospects in the Asia Pacific Region", *Journal of Eurasian Studies*, 7(1): 49-59.

*FRA (2005),"*Global forest resources assessment 2005*", FAO Forestry Paper 147. [Online Web] Accessed on 20 July 2017, URL: http://www.fao.

Gerson, M. S. (2010), "The Sino-Soviet Border Conflict", *Deterrence, Escalation, and the Threat of Nuclear War in*.

Gianessi, Leonard and Williams, Ashley (2011), "Pesticide Use in Russia: Restoring the Benefits", Croplife.org, [Online Web] Accessed on 17 July 2017, URL: https://croplife.org/case-study/pesticide-use-in-russia-restoring-the-benefits/

Gleick, P. H. (1996),"Basic water requirements for human activities: meeting basic needs",*Water international*, *21*(2): 83-92.

Curtis, Glenn E.(eds) (1996), "*Russia: A Country Study",* Washington: GPO for the Library of Congress, [Online Web] Accessed on 23 July 2017, URL: http://countrystudies.us/russia/.

*Government of the Sakha Republic (Yakutia) Russian Federation, (2011), *Investment Guide Book of the Sakha Republic (Yakutia)*, Sakha Republic.

Graeger, Nina (1996), "Environmental Security?",*Journal of Peace Research*, 33(1):109-116

Grajdanzev, A.J. (1941), "The Trans-Siberian Railway and the Problem of Soviet Supply", Pacific Affairs, 14(4):388-415.

Gurkov, I., Morgunov, E., Settles, A., &Zelenova, O. (2014),"Human resource management in Russia over a century of storm and turmoil: a tale of unrealized dreams",*The Development of Human Resource Management Across Nations: Unity and Diversity*, 363.

John J. Stephan. (1974),*The Kuril Islands: Russo-Japanese Frontier in the Pacific*. Oxford University Press.

Hall, R. P., Van Koppen, B., & Van Houweling, E. (2014), "The human right to water: the importance of domestic and productive water rights", *Science and engineering ethics*, 20(4): 849-868.

Harada, C. (2013),*Russia and North-east Asia* (No. 310),Routledge.

Haley, M., & Clayton, A. (2003). "The role of NGOs in environmental policy failures in a developing country: the mismanagement of Jamaica's coral reefs". *Environmental Values*, *12*(1):29-54.

Hays, Jeffrey (2008), "Air Pollution and the Contamination of Russia's the Land and Forest in Russia", *Facts and Details*, May 03, 2017 URL: http://factsanddetails.com/russia/Nature_Science_Animals/sub9_8c/entry-5065.html

Henderson, J., &Mitrova, T. (2016), *Energy Relations between Russia and China: Playing Chess with the Dragon*, Oxford Institute for Energy Studies.

Henderson, S. (2003),*Building democracy in contemporary Russia: Western support for grassroots organizations*, Cornell University Press.

Helmer, R., Hespanhol, I., & World Health Organization, (1997),"Water pollution control: a guide to the use of water quality management principles".

Henry, L. and Douhovnikoff, V. (2008), "Environmental Issues in Russia", *Annual Review of Environment and Resources*, 33(1)1: 437-60.

Hepler, K. (2012), "The Russian Far East: Opportunities and Challenges for Russia's Window on the Pacific", *Wilson Center*, [Online Web] Accessed on 16 July 2017, URL: https://www.wilsoncenter.org/publication/the-russian-far-east-future-opportunities-and-challenges-to-russias-window-the-pacific

Hill, Richard Child (2007), "Neoliberalism &Developmentalism: The East Asian Experience", Taipei Discussion Forum, [Online Web] Accessed on 16 July2017,URL:https://msu.edu/user/hillrr/Taipei%20Talk%20Neolib%20&%20Dev.htm

Hohenemser, C. (1988),"The accident at Chernobyl: health and environmental consequences and the implications for risk management",*Annual review of energy*, *13*(1): 383-428.

Homer-Dixon, T. F. (2010), *Environment, scarcity, and violence*, Princeton University Press.

Honneland, Geir and Jorgenson, Anne-Kristin (2003),*Implementing international environmental agreements in Russia,* Manchester and New York: Manchester University Press

*Iucn, U. (1991). WWF (1991), "Caring for the Earth: a strategy for sustainable living", *IUCN, UNEP, WWF, Gland*.

Josephson, Paul R. et al. (2013), *An Environmental History of Russia*, Cambridge University Press: Cambridge.

Kalikhman, T. P. (2012), "The Nature Conservation of Baikal Region: Special Natural Protected Areas System in Three Environmental Models", *Geography and Natural Resources* 9: 199–222.

Kang, Yinhong et al. (2009), "Climate change impacts on crop yield, crop water productivity and food security – A review", *Progress in Natural Science*, 19(12): 1665 – 1674.

Kaplan, R. D. (1994), The coming anarchy. *February*, *273:* 44-76.

Kaplan, Robert (2000), *The coming anarchy: Shattering the dreams of the post cold war*. New York: Random House.

Karjalainen, Timo Pauli and Habeck, Joachim Otto (2004), "When 'The Environment' Comes to Visit: Local Environmental Knowledge in the Far North of Russia", *Environmental Values*, 13(2):167-186.

Katona, K. (2016), "Russian gas diplomacy and the Sakhalin-Japan pipeline", Russia Direct, [Online Web] Accessed on 16 July 2017, URL: http://www.russia-direct.org/opinion/russian-gas-diplomacy-and-sakhalin-japan-pipeline

Khrushchev, Nikita S., and Mikhail Gorbachev (1993),"The Environmental Movement and Environmental Politics", *Troubled Lands: The Legacy of Soviet Environmental Destruction, 1st ed. Westview Press Inc.*

Kibel, Paul Stanton (1994), "Russia's Wild East: Ecological Deterioration and the Rule of Law in Siberia", *Georgetown International Environmental Law Review* 7(1): 59-76.

Kim, W. B. (1994), "Sino-Russian Relations and Chinese Workers in the Russian Far East: A Porous Border", *Asian Survey*, 34(12): 1064–1076.

King, Col. W. Chris (2000), *Understanding International Environmental Security: A Strategic Military Perspective,* Army Environmental Policy Institute: Georgia.

Kolbasov, Oleg S. (1987). 'Environmental Policy and Law in the USSR', *Environmental Law Reporter*, 17 ELR 10068. Retrieved from http://elr.info/sites/default/files/articles/17.10068.htm.

Korff, S. A. (1923), "Russia in the Far East", *The American Journal of International Law*, 17(2): 252–284.

Korppoo, Anna et al., (2015*), Russia and the Politics of International Environmental Regimes: Environmental Encounters or Foreign Policy?*, Cheltenham: Elgar Publishing.

Kortunov, Andrei (2017), "Russia in the future world order: challenges, opportunities, strategies", Chair of the Great Strategic Current Issues, [Online Web] Accessed on 17 July 2017, URL: http://chairestrategique.univ-paris1.fr/fileadmin/chairestrategiesorbonne/conferences_2017/Articles_2017/Conf_2_Andrei_Kortunov_La_Russie_dans_un_ordre_mondial_en_evolution_Enjeux__opportunites__strategies.pdf

Krupnick, C. (2001),*Decommissioned Russian nuclear submarines and international cooperation*, McFarland.

Kumari, Anitha K. et al., (2014), "Adverse Effects of Chemical Fertilizers and Pesticides on Human Health and Environment", *Journal of Chemical and Pharmaceutical Sciences*, 3: 150-151.

Lasserre, Frederic (2003), "The frontier of Love. Once a symbol of conflict, could it turn into an asset of water resources? ", Cybergeo: European Journal of Geography [Online], Environment, Nature, Landscape, Document 242, Accessed June 16, 2017. URL: http://cybergeo.revues.org/4141

Lee, R. (2012), "*The Far East between Russia, China and America*", Foreign Policy Research Institute, Accessed on 16 July 2017 URL: https://www.files.ethz.ch/isn/153942/201207_lee_fareast.pdf

Lee, R. (2013), "The Russian Far East: Opportunities and Challenges", Foreign Policy Research Institute, [Online Web] Accessed on 16 July 2017, URL: http://www.fpri.org/article/2013/04/the-russian-far-east-opportunities-and-challenges/

Lee, Kwon H., et al. (2005), "Impact of the smoke aerosol from Russian forest fires on the atmospheric environment over Korea during May 2003." *Atmospheric Environment* 39.1: 85-99.

Lukin, Artyom L. (2007), "Environmental Security of Northeast Asia: A Case of the Russian Far East", *Asian Affairs*, 34(1): 23-35.

Malle, S. (2017),"Russia and China in the 21st century. Moving towards cooperative behavior", *Journal of Eurasian Studies*.

Maloney-Dunn, Kathleen M. (1993), "Russia's Nuclear Waste Law: A Response to the Legacy of Environmental Abuse in the Former Soviet Union", *Arizona Journal of International and Comparative Law*, 10(2):365-430

Matthew, Richard A. et al. (eds) (2010), Global Environmental Change and Human Security, *Massachusetts Institute of Technology*, The MIT Press Cambridge: Massachusetts London, England.

McDonald, Matt (2009), "International Affairs (Royal Institute of International Affairs 1944)", *International Affairs (Royal Institute of International Affairs 1944-)*, 85(6):1262-1263.

McPherson, Ben (2016), "The Far East could increase Russia's energy clout in Asia-Pacific", Russia Direct, [Online Web] Accessed on 17 July 2017, URL: http://www.russia-direct.org/opinion/far-east-could-increase-russias-energy-clout-asia-pacific

Medvedev, Dmitry (2016), "Social and economic development of Russia: Finding new dynamics", *Russian Journal of Economics*, 2(4): 327-348.

Meyer, P. F. (1999), "The Russian Far East's Economic Integration with Northeast Asia: Problems and Prospects", *Pacific Affairs, 72*(2): 209-224.

*Ministry for the Development of the Russian Far East, (2013), *National Priority for the Entire 21st Century,* Government of the Russian Federation, Moscow.

Ministry of Sweden (2017), Ministry of the Environment, "International Environmental Agreements", [Online Web] Accessed on 16 July 2017, URL: www.ym.fi/en-us/international_cooperation/International_environmental_agreements

Najam, A. (2003), "The human dimensions of environmental insecurity: some insights from South Asia", *Environmental change and security project report*, (9): 59-73.

Najam, A., Runnalls, D., & Halle, M. (2016). "Environment and Globalization: Five Propositions" (2010). *The Globalization and Environment Reader*, 94.

*National Institute for Research Advancement (2007), *Russia's Total Security Environment -Various Issues in East Asia*, May 03, 2017, URL:http://www.nira.or.jp/past/publ/houko/i19990128.html

*National Intelligence Council (2011), "*The Environmental Outlook in Russia*", Intelligence Community Assessment.

Neslen, Arthur and Evans, Rob (2015), "Industry lobbyists weakened Europe's air pollution rules, say Greenpeace", The Guardian, [Online Web] Accessed on 16 July 2017, URL: https://www.theguardian.com/environment/2015/mar/05/industry-lobbyists-weakened-europes-air-pollution-rules-say-greenpeace

Newell, J. P., & Henry, L. A. (2016), "The state of environmental protection in the Russian Federation: a review of the post-Soviet era", *Eurasian Geography and Economics, 57*(6): 779-801.

Novakovsky, Stanislaus (1922), "The Probable Effect of the Climate of the Russian Far East on Human Life and Activity", *Ecology*, 3(3): 181–201.

Rosenbaum, W. A. (2013),*Environmental politics and policy*,Cq Press.
*OECD (2001), "*Governance in the 21st Century*", Paris.
*OECD (2002), "*Foreign Direct Investment and the Environment: Lessons from the Mining Sector*", OECD Global Forum on International Investment, Paris.
*OECD (2006), "*Environmental Policy and Regulation in Russia: The Implementation Challenge*", OECD, Paris.
*OECD (2012), "*Green Growth and Developing Countries: Consultation Draft*", OECD.
Olcott, M.B. and Udalova, N. (2000), "Drug Trafficking on the Great Silk Road: The Security Environment in Central Asia", *Carnegie Endowment for International Peace*, Massachusetts.
Osherenko, G. (2000),"Indigenous rights in Russia: is title to land essential for cultural survival",*Geo. Int'l Envtl. L. Rev.*, *13*:695.
Oslo Project Office of the Global Environmental Change and Human Security Program (GECHS) of the International Human Dimensions Program on Global Environmental Change (IHDP) (2001), "*Environment Conflict*", in Diehl, P. F. and Gleditsch, N.P. (eds.), Colorado and Oxford: Westview Press.
Panaiotov, T. (1994), *Economic instruments for environmental management and sustainable development*, UNEP.
Panda, Ankit (2014), "How the Soviet Union Created Central Asia's Worst Environmental Disaster", The Diplomat, [Online Web] Accessed on 17 July, URL: http://thediplomat.com/2014/10/how-the-soviet-union-created-central-asias-worst-environmental-disaster/
Passas, Nikos (2000), "Global Anomie, Dysnomie, and Economic Crime: Hidden Consequences of Neoliberalism and Globalization in Russia and Around the World", *Social Justice*, *27* (2 (80)):16-44.
Pereira, J. C. (2015), "Environmental issues and international relations, a new global (dis) order-the role of International Relations in promoting a concerted international system", *RevistaBrasileira de PolíticaInternacional*, *58*(1): 191-209.
Pereltsvaig, A. (2014), "Depopulation of Magadan", Languages of the World: Exploring The Rich Diversity of Human Languages, [Online Web] Accessed on 16 July 2017, URL:http://www.languagesoftheworld.info/russia-ukraine-and-the-Caucasus/depopulation-magadan.html.
Perry, William J. (2006), "Proliferation on the Peninsula: Five North Korean Nuclear Crises", *The Annals of the American Academy of Political and Social Science*, 607: 78-86.
Poelzer, G and Fondahl, G (1997), *Indigenous Peoples of the Russian North*, Cultural Survival Quarterly Magazine [Online Web], Accessed on 15 July 2017, URL: https://www.culturalsurvival.org/publications/cultural-survival-quarterly/indigenous-peoples-russian-north.

Reif, Kingston and Horner, Daniel (2014), "Russia Skips Summit Planning Meeting", *Arms Control Today*, 44(10):26-27.

Report of the UN Chernobyl Forum Expert Group, "Environment" (EGE), (2005), *Environmental Consequences of the Chernobyl Accident and Their Remediation: Twenty Years of Experience*, Chernobyl Forum.

Ridgeway, James (1990), "USSR in Crisis: Environmental Devastation in the Soviet Union", *The Multinational Monitor*, 11(9).

Ries, N. (2009), "Potato ontology: surviving post socialism in Russia", *Cultural Anthropology*, *24*(2): 181-212.

Rønnfeldt, C. F. (1997), "Three generations of environment and security research", *Journal of Peace Research*, *34*(4): 473-482.

Rutland, Peter (2013), "Neo Liberalism and the Russian Transition, *Review of International Political Economy*, 20(2):332-362.

Rutland, Peter (2008), "Putin's Economic Record: Is the Oil Boom Sustainable?", *Europe Asia Studies*, 60(6): 1057-1072.

Rahu, M. (2003),"Health effects of the Chernobyl accident: fears, rumours and the truth",*European Journal of Cancer*, *39*(3), 295-299.

Robinson, Nicholas A. (1988), "Perestroika and Priroda: Environmental Protection in the USSR", 5 Pace Envtl. L. Rev. 351 URL: http://digitalcommons.pace.edu/lawfaculty/385/.

Ryszkowski, L. (1994). *The integrated development of the countryside in Central and Eastern European Countries* (Vol. 70). Council of Europe.

Savli, Tulay (2012), "*Russia's Asia Pacific Policy in the Post Cold War Era",* MSc Thesis, Turkey: Middle East Technical University.

Scheffer, Paul (1930),"Stalin's Power", *Foreign Affairs*, 8(4):559-68.

Sheingauz, A. (2000). Outlook of Underlying Causes of Deforestation and Forest Degradation in Southern part of the Russian Far East. *A Step toward Forest Conservation Strategy (1): Interim Report 1998: IGES Forest Conservation Project*, 431-455

Schindler, Debra L. (1994), "Competing for resources: First Nation Right and Economic Development in the Russian Far East", in Johnston, Barbara R. (eds.) *Who Pays the Price?: the Sociocultural Context of Environmental Crisis*, Island Press. URL: http://arcticcircle.uconn.edu/SEEJ/Russia/deb.html

Sills Joe B. et al., (2000), "Environmental Security: United Nations Doctrine for Managing Environmental Issues", *Army Environmental Policy Institute*, 1

Simonov, Evgeny (2011), *Environmental risks to Sino-Russian transboundary cooperation: from brown plans to a green strategy*, WWF's Trade and Investment Programme report, Moscow-Vladivostok: WWF.

Stocks, Brian J., et al. (1998), "Climate change and forest fire potential in Russian and Canadian boreal forests." *Climatic change* 38.1: 1-13.

Strangio, Sebastian (2011), *Russia's Far East Forest Mafia*, The Diplomat [Online Web], Accessed on 14th July 2017, URL:http://thediplomat.com/2011/04/russias-far-east-forest-mafia/.

Svarin, D. (2016), "The construction of 'geopolitical spaces' in Russian foreign policy discourse before and after the Ukraine crisis", *Journal of Eurasian Studies*, *7*(2): 129-140.

Tadjbakhsh, Shahrbanou and Chenoy, Anuradha (2007), *Human Security: Concepts and implications*, Taylor & Francis.

The Guardian (2016), "Putin hails first rocket launch from new cosmodrome", The Guardian, [Online Web] Accessed on 16 July 2017, URL: https://www.theguardian.com/world/2016/apr/28/putin-rocket-launch-cosmodrome-soyuz-delay-space

*The World Bank (2004), "*Environmental Management in Russia: Status, Directions and Policy Needs*", Environmentally and Socially Sustainable Development Unit Europe and Central Asia Region.

Thomson, Peter (2008), "Russia's Lake Baikal: Preserving a Natural Treasure", Yale Environment 360, [Online Web] Accessed on 16 July 2017, URL: http://e360.yale.edu/features/russias_lake_baikal_preserving_a_natural_treasure

Thornton, Judith A. (2011), "Institutional change and economic development in Siberia and the Russian Far East", *Browser Download This Paper*.

Treisman, D. (2012), "Inequality: the Russian experience", *Current History*, *111*(747):264.

Turovsky, R. (2016), "Socio-economic development of the Russian Far East: projects and realities", East Russia, [Online Web] Accessed on 16 July 2017, URL: https://www.eastrussia.ru/material/socioeconomic-development-of-the-russian-far-east-projects-and-realities/

Tynkkynen, V. P. (2007). Resource curse contested—Environmental constructions in the Russian periphery and sustainable development. *European planning studies*, *15*(6), 853-870.

*U.S. Congress, Office of Technology Assessment (1995), "*Environmental Policy Tools: A User's Guide"*, OTA-ENV-634 (Washington, DC: U.S. Government Printing Office, September 1995).

*UNDP (1997), *Human Development Report*, Oxford University Press, Oxford and New York.

*United Nations (1987), Report of the World Commission on Environment and Development, *Our Common Future*, Oslo.

*United Nations (1992), *Conventions on Biological Diversity*, United Nations.

*United Nations (1998), *Kyoto Protocol to the United Nations Frame work Convention on Climate Change*, United Nations.

United Nations Development Programme (1994), "Human Development Report", New York Oxford: Oxford University Press. *

*United Nations Environment Programme (2007), *GEO4 Global Environmental Outlook: Environment for Development Nairobi: United Nations Environment Program.*

*United Nations, *Human Development Report: New dimensions of human security* 1994. New York: UNDP, 1994.

Usha, K. B. (2016), "The Aral Sea Crisis in Central Asia: Environment, HumanSecurity and Gender Concerns", *IUP Journal of International Relations*, 10(2), April, 7-29.

Vandergert, P. and Newell, J. (2003), "Illegal Logging in the Russian Far East and Siberia", *The International Forestry Review*, 5(3): 303–306.

Wells, M. P. and Williams, M. D. (1998), "Russia's Protected Areas in Transition: The Impacts of Perestroika, Economic Reform and the Move towards Democracy", *Springer on behalf of Royal Swedish Academy of Sciences*, 27(3):198-206.

Wernstedt, K. (2002). *Environmental management in the Russian federation: A next generation enigma*, Resources for the Future.

Whish-Wilson, P. (2002), "The Aral Sea environmental health crisis", *Journal of rural and remote environmental health*, *1*(2): 29-34.

White, R. (2014), "Environmental Insecurity and Fortress Mentality", *International Affairs*, 90: 835–851.

*WHO (2005), *"Chernobyl: the true scale of the accident*", World Health Organization, [Online Web] Accessed 17 July 2017, URL: http://www.who.int/mediacentre/news/releases/2005/pr38/en/

Wishnick, Elizabeth (1998), "Prospects for the Sino-Russian Partnership: Views from Moscow and the Russian Far East", *The Journal of East Asian Affairs*, 12(2): 418–451.

Wishnick, Elizabeth (2005), "The Russian Review", *The Russian Review*, 64(1):171-171.

World Nuclear Association (2016), "Chernobyl Accident 1986", World Nuclear Association, [Online Web] Accessed on 16 July 2017, URL: http://www.world-nuclear.org/information-library/safety-and-security/safety-of-plants/chernobyl-accident.aspx.

World Nuclear Association (2017), "Liability for Nuclear Damage", World Nuclear Association, [Online Web] Accessed on 17 July 2017, URL: http://www.world-nuclear.org/information-library/safety-and-security/safety-of-plants/liability-for-nuclear-damage.aspx

Worldview Stratfor (2012), "The Geopolitics of Russia: Permanent Struggle", Worldview.Stratfor.com, [Online Web] Accessed on 17 July 2017, URL: https://worldview.stratfor.com/article/geopolitics-russia-permanent-struggle

*WWF-Russia (2008), *WWF-Russia Annual Report*, WWF-Russia, Moscow

Zaharchenko, T (1990), "The Environmental Movement and Ecological Law in the Soviet Union: The Process of Transformation", *Ecology LQ*, 17:455.

Zakharova, L. (2016), "Economic cooperation between Russia and North Korea: New goals and new approaches." *Journal of Eurasian Studies, 7*(2): 151-161.

Zeigler, Charles, E. (1987), *Environmental Policy in the USSR*, Northwestern University: Pinter.

Zubacheva, Ksenia (2016), *Russian economic development heads to the Far East*, Russia Beyond the Headlines, Accessed on 15 July 2017, URL: https://www.rbth.com/press_releases/2016/10/05/russian-economic-development-heads-to-the-far-east_636075.