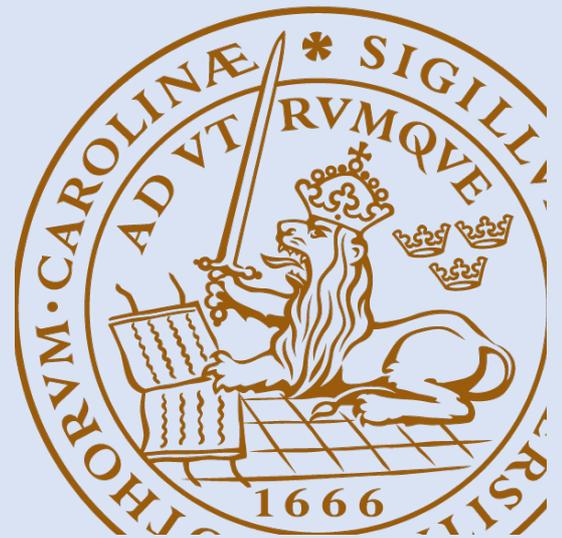


ENVIRONMENTAL GOVERNANCE IN ARMED CONFLICTS: A CASE STUDY IN EASTERN UKRAINE

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**Environmental governance in armed conflicts:
A case study in eastern Ukraine**

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Abstract:

Environmental damage during armed conflicts can create significant risks to the civilian population. It is associated with acute and long-term threats to public health and livelihoods, limited access to such resources as water. On top of direct impact (e.g. physical destruction), secondary impact (e.g. resulting from coping strategies of populations), armed conflicts also weaken environmental governance or lead to its collapse. The consequences of environmental governance collapse are long-term, persistent, and affecting larger territories than directly military operations.

The thesis explores knowledge available in the academic and grey literature about environmental governance in conflicts, with a focus on the impact of armed conflicts on governance capabilities, methods for assessing environmental governance in conflicts, key governance actors, external support and international instruments for the protection of the environment in armed conflict. Additionally, the research brings together recommendations for improving environmental governance in armed conflicts.

The case study focusing on examining environmental governance in the ongoing armed conflict in eastern Ukraine allows to compare the results of the literature review with the findings of an actual case. It serves to support the development of general knowledge about environmental governance in conflict areas. The lack of neutrality of the sources was acknowledged as an intrinsic part of the context and the research in conflict settings.

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After having grown up and living for quite a bit in a country affected by armed conflicts, working on this thesis has been particularly meaningful. It is dedicated to all those whose lives have been touched by or changed as the result of the military confrontation.

Unlike States, the environment, which is crucial for our survival and wellbeing, does not recognize borders. In parallel, it remains under-prioritized on the policy agenda. Environmental concerns remain pushed aside by other issues that seem “more significant”. This narrow outlook leads to undermining our own resilience and increased systemic risk. COVID-19 demonstrates once again the links between ecosystem stability, the environment and human health. While we acknowledge the links between them, it is time to eventually act and create a more resilient society.

I have to acknowledge it has been challenging to combine full-time work and working on the thesis. As a result, the thesis has been produced during gaps between contracts and during the COVID-19 lockdown. To all those, who want to combine full-time work and working on the thesis project, I advise not to.

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List of Acronyms

ALS	Areas of Limited Statehood
CBRN	Chemical, Biological, Radiological and Nuclear
CEOBS	Conflict and Environment Observatory
DPR	Donetsk People's Republic
EC	European Commission
EDACS	Event Data on Armed Conflict and Security
EPR	Environmental Performance Review
ICRC	International Committee of the Red Cross
ICC	International Criminal Court
ILC	International Law Commission
ILPI	International Law and Policy Institute
LPR	Luhansk People's Republic
MNRES	Ministry of Natural Resources and Ecological Safety
MOOC	Massive Open Online Course
MONUSCO	United Nations Organization Stabilization Mission in the Democratic Republic of the Congo
NATO	North Atlantic Treaty Organization
NGO	Non-Governmental Organization
NSAG	Non-State Armed Group
PCEA	Post-Conflict Environmental Assessments
PSC	Private Security Company
OSCE	Organization for Security and Co-operation in Europe
SDG	Sustainable Development Goal
UN	United Nations
UNEP	United Nations Environment Programme
UNECE	United Nations Economic Commission for Europe
UNDP	United Nations Development Programme
UNGA	United Nations General Assembly
UNHABITAT	United Nations Human Settlements Programme
UN OCHA	United Nations Office for the Coordination of Humanitarian Affairs
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

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Summary

The impact of armed conflicts on environmental governance is long-term, persistent, and affects larger territories than military operations. While direct environmental damage during conflicts has been increasingly researched, environmental governance in armed conflicts attracts relatively little attention. The thesis aims to contribute to clarifying the role of environmental governance in armed conflicts and to suggest how environmental governance can be improved in such circumstances. The research aim is met by a combination of a review of academic and grey literature and a case study analysis focusing on the ongoing armed conflict in eastern Ukraine.

The literature review identifies multiple factors associated with the impact of armed conflicts on environmental governance, e.g. lack of prioritisation of the environment on the policy agenda; hindered data collection, environmental monitoring and information sharing; limitations of international instruments to protect the environment and limited external support to sustain governance capacity. They result in significant challenges. Meanwhile, research also points to the existence of varied strategies to maintain environmental governance capacity during armed conflicts and acknowledgment of good environmental governance as a pathway for building peace and stability. The thesis brings together and complements existing recommendations.

Environmental governance is thought to be particularly affected in long-term, low-intensity armed conflicts and civil wars. However, despite the common assumption that breakdown of governance system prevails, research shows various combinations of actors involved in environmental governance provision in armed conflict. This includes amongst other non-state armed groups which have long-term objective, seek social trust of local communities, or aim to support their claims of legitimacy. Fraught with challenges, measurement of governance in general in conflict areas have significantly improved over the last decades. However, little evidence suggests that this progress has been reflected on environmental governance assessments.

The case study allows to compare the results of the literature review with the findings of an actual case. It is based on examining written sources of the de-facto authorities. The lack of neutrality of the sources and politicization was acknowledged as an intrinsic part of the context and the research in conflict settings. The relevance of recommendations is discussed with respect to the case study.

The case study illustrates some factors in eastern Ukraine, consistent with the findings of the literature review, and factors that contradict knowledge in the reviewed literature. For instance, the case study identifies the potential overstatement of the unavailability of environmental data and data on non-state actors in armed conflicts and environment. The de-facto authorities have developed institutional, legal and policy frameworks for environmental protection and natural resources management and allocate significant importance to environmental protection on the policy agenda. Environment is intensely politicized in eastern Ukraine.

Chapter 1: Introduction

1.1. Rationale

Environmental damage during armed conflicts can create significant risks to the civilian population (Conca & Wallace, 2009), lead to an acute and long-term threat to public health and livelihoods, limit access to such resources as water and agricultural land (Weir, 2015a). Consequently, protection of the environment should be an integral and indispensable component of the protection of civilian population (Weir, 2015a). It is critical as over 20% of people live in conflict-affected areas and fragile states (UNEP, 2018) and countries affected by conflict make up 11% of the surface area of the Earth (Mobaied & Rudant, 2019).

Armed forces are considered as both some of the major polluters causing environmental damage as well as consumers of resources (Collins, 2013). The level of environmental damage depends on a variety of factors such as the weapons as well as the tactics used, location of the military operations (e.g. rural vs urban, in proximity to industrial sites), the duration of the military conflict (Jensen, 2019) and the pre-war environmental conditions (Biswas, 2000). Weak governance, conflict and environmental degradation are interlinked (Le Billon, 2012, cited in Johnson, 2019). Environmental stress can destabilize countries (Galgano, 2019). Countries risk entering the vicious cycle between environmental degradation and conflict as pollution and environmental hazards can, on the other hand, undermine security and lead to political instability, disasters and regional tensions (Conca & Wallace, 2009, NATO, 2014). But environment is not only a “victim” of armed conflict. Scholars point out that environment can be a source of conflict (Kameri-Mbote, 2005). In case of failure to respond, it can hinder further peacebuilding efforts (Jensen & Lonergan, 2012), increase human suffering and vulnerability to disasters (Conca & Wallace, 2009).

The impact of conflicts on the environment is threefold: direct impact, secondary impact, and environmental governance impact. Direct impact encompasses intentional targeting of the environment e.g. drainage of the Iraqi marshlands by Saddam Hussein to strip the Marsh Arabs of their livelihoods (Jensen, 2019) or water poisoning as a military tactic in Darfur (Pennington & Cech, 2009), physical destruction e.g. during the military confrontation between Israel and Lebanon about 62% of agricultural land was contaminated due to the use of cluster bombs, or the use of natural resources by militant groups to finance conflict e.g. artisanal gold mining by military groups in Colombia (Jensen, 2019). Furthermore, conflict impact environment regionally, e.g. regional air pollution as the result of Kosovo conflict in 1999 (Vukmiroviae et al. 2001, Melas et al. 2000, cited in Hopke, 2009) or the war in Iraq when the fallout from oil fires was reported in rain as far as Japan (Tazaki, et al, 2004). Modern military confrontations may involve exposure to toxic substances and substances of uncertain toxicity e.g. depleted uranium used in a munition. Large amounts of depleted uranium may remain deposited in the soil after the end of the military operations. It represents a significant hazard due to potential contamination of air, soil and water (Murray et al 2002).

Secondary impact results from the coping strategies used by the population to survive in conflict. For instance, it may involve overuse of national resources and their extermination, environmental damage due to displacements, growth of black-market during conflicts,

implementation of large-scale humanitarian and peacekeeping operations without due consideration of environmental impact e.g. deforestation in Darfur caused by compound construction (Jensen, 2019).

Last but not least, military conflicts frequently weaken environmental governance structures, hinder policy coordination, investment and the enforcement of the law (UNEP, 2009; Jensen, 2019; Bruch, 2019). The brain drain or loss of expertise associated with fleeing the country for personal security reasons decreases the state capacity. The financial resources and technical equipment usually utilised for environmental law enforcement can be redirected to war needs (Bruch, 2019), destroyed, or left without fuel, electricity, spare parts, etc. Meanwhile, the legitimacy of the national government can be undermined particularly in cases of civil wars, when insurgents have the support of the population and the trust is lost between communities and national government. As a result, governance vacuum is created, illegal activities increase rapidly as criminal organizations usually can with much more ease move in into the governance vacuum (Bruch, 2019). The collapse of environmental governance, however, has been cited as potentially the most challenging impact to address. The consequences are long term, persistent and affecting larger territories than from direct impact (Jensen, 2019). Gaynor, et al (2016) in their study at UC Berkley suggest that during armed conflicts institutional collapse kills more wildlife than directly military tactics. Once environmental governance is eroded, re-establishing environmental governance capacity is a long-term process that can take years (Bruch, Muffett, & Nichols, 2016).

Environmental experts have been highlighting the importance of environmental protection in armed conflicts since the 1960s (NATO, 2014). Environmental damage does not result merely from military necessity but also represents the consequence of systemically poor regard for environmental protection (Kellay, 2014). Foreseeably, during a conflict the attention paid to the environment often decreases. Meanwhile, if the tipping point is reached the results are devastating for multiple sectors (Jensen, 2019).

Lack of accountability for the harm to the environment and public health caused by conflict undermines recovery from conflicts, weakens the environmental and health rights of citizens; damages peace-building and reconciliation initiatives; weakens democracy, justice, human rights, and international security; leads to the loss of ecosystems and biodiversity (Kellay 2014), which are critical for human well-being (WHO, n/d). Failure of the international community to protect and restore environment undermines the delivery of the Sustainable Development Goals (e.g. SDG 3, 6, 14 & 15) for many countries (Weir 2016a; Weir 2016b).

1.2. Research Aim

While much is written on direct environmental damage during conflicts and the vicious circle between conflict, natural resources, and environment, the topic of environmental governance in armed conflicts attracts little attention. It is commonly assumed that anarchy prevails and breakdown of governance system occurs generally, including in the field of environmental protection (e.g. Hanson, 2018). The aim of the present thesis is to contribute to clarifying the role of environmental governance in armed conflicts and to suggest how environmental governance can be improved in such circumstances.

The research aim is met by a combination of a literature review and a case study analysis. As there is no comprehensive overview of the literature on the topic, the review of current scientific knowledge and grey literature on the subject serves to gain an overview of the existing research and debate in the field, reveal gaps and point the way forward for further research.

Analysis of the ongoing conflict in eastern Ukraine contributes with knowledge regarding the subject that is difficult to obtain from previous academic and grey literature. It serves to compare the literature findings with the analysis of an actual case. The selection of the case study focusing on eastern Ukraine also contributes to our knowledge of the specifics and the role of environmental governance in eastern Ukraine. Although the conflict in eastern Ukraine is one of the conflicts that has attracted significant attention in recent years, not much is known about the role of the environment and its governance in this conflict.

1.3. Research Questions

To achieve the overall aim of the thesis, understanding the impact of armed conflicts on environmental governance is crucial. However, if it is not analysed how information is obtained and how environmental governance is investigated and measured in armed conflicts, research may produce incomplete or distorted results. It needs to be informed by an understanding of common challenges for governance assessments in armed conflicts. Therefore, based on the research aim and the above considerations, the following research questions have been identified and investigated in the thesis:

Research question 1 (R1): What is known in academic and grey literature about environmental governance in conflicts?

Research question 2 (R2): How can environmental governance in conflict zones be investigated in an ongoing conflict?

Research question 3 (R3): How is environmental governance implemented in an ongoing armed conflict in non-government-controlled areas of eastern Ukraine?

Research question 4 (R4): How can environmental governance in conflicts be improved?

The research questions were answered using the integrated inductive and deductive approaches. In particular:

- A review of academic and grey literature was conducted focusing on the impact of armed conflict on environmental governance. The literature review also identified common challenges and existing methods to investigate and measure environmental governance in an ongoing conflict. R1 and R2 were answered based on the review of the academic and grey literature.
- R1 and R2 findings were supplemented by the analysis of the United Nations Economic Commission for Europe (UNECE) Environmental Performance Reviews, to develop a practical analytical framework. It allowed approaching in a comprehensive manner the content analysis of literature on the topic of environmental governance in non-government-controlled areas of eastern Ukraine (Donetsk and Luhansk's regions) for 2014-2020.

- R3 was answered through the analysis of information made publicly available by the de-facto authorities of the Luhansks and Donetsk regions of eastern Ukraine. Most of the information on the environmental situation in eastern Ukraine comes from the Ukrainian government side. But, de-facto authorities of Luhansk and Donetsk's have made several statements on environmental issues and have contributed to the politicisation of a range of issues, such as the risks from flooded mines and damaged industry. Therefore, to answer R3 it was decided to examine the perspectives of the de-facto authorities, their role as governance actors and how the governance has fared. The case study included analysis of written information.
- To answer R4, the findings of the review of academic and grey literature were analysed. The literature review produced a list of recommendations, complemented with a contribution of the author of the thesis. The applicability of recommendations was discussed in respect to eastern Ukraine.

1.4. Thesis Structure

Chapter 1: Introduction. Outlines rationale, research aim, questions and objectives.

Chapter 2: Methodology. Describes the methodology used to implement the research. Furthermore, it discusses its limitations and approaches undertaken to overcome them. An analytical framework is outlined to approach the case study.

Chapter 3: Review of the Academic and Grey Literature. A review of academic and grey literature is presented with a focus on the impact of armed conflicts on environmental governance, key governance actors in armed conflict areas, investigation of environmental governance in armed conflict areas, international instruments and external support. Recommendations are outlined for the improvement of environmental governance in armed conflicts. Conclusions, gaps in the state of art as well as needs for further research are outlined.

Chapter 4: Case Study Analysis. It introduces the Donetsk and Luhansk regions of Ukraine with a particular focus on the state of environment and environmental challenges the region faces after the onset of the armed conflict. Synthesis of the results of the study is presented.

Chapter 5: Comparison of Results. The chapter compares the results of the case study with the literature. The analysis and interpretation of the key findings from the case study are discussed.

Chapter 6 Discussion. This chapter discusses the limitations, gaps, and potential for future research.

Chapter 7: Conclusions. A summary of the key findings is presented. It is accompanied by a reflection upon the extent to which the thesis' aim was met.

Chapter 2: Methodology

2.1. Introduction

The methodology was developed to maintain the replicability of results on other case studies and research in the field that could be undertaken (King & Verba, 1994). A scoping study of available academic and grey literature was conducted according to the framework developed by Arksey & O'Malley (2005), followed by a traditional review of the academic and grey literature, qualitative comparison of primary and secondary sources (King & Verba, 1994) and supported by a qualitative content analysis for category and content. The research was conducted in six stages as suggested by Arksey & O'Malley (2005): identifying the research question; identifying relevant studies; study selection based on inclusion and exclusion criteria; charting of data (thematic); collating, summarizing and reporting the results; consultation exercise. The definitions and explanation of the concepts relevant for the research have been reported in Annex I: Concepts and Definitions.

2.2. Review of the academic and grey literature

Keeping the research questions broad allowed to explore the breadth of literature available to assist in answering the research questions Arksey & O'Malley (2005). Various sources have been investigated as suggested by Arksey & O'Malley (2005), including electronic databases, reference lists, professional networks, blogs.

The findings from academic literature were derived from the research conducted in Google Scholar and Scopus as the largest abstract and citation database of peer-reviewed literature inter alia in the fields of science, social sciences, and humanities (Elsevier, 2018). The two search engines can be seen as complementary tools for research in academic databases, as they have slightly different algorithms and access to databases.

Identification of relevant studies and study selections steps were modified and repeated several times to collate a substantial number of relevant articles. The process was not linear and was undertaken in a reflective way, repeating steps to ensure that literature is comprehensively covered as recommended by Arksey & O'Malley (2005) and Levac et al. (2010). For instance, a combination of keywords “environmental governance” AND “humanitarian response” did not generate any results. A combination of keywords “environmental governance” AND “humanitarian assistance” generated two results which were eliminated after the title and abstract analysis. The most relevant result in Scopus for the thesis was achieved by combining the following keywords:

- 1) environment AND governance AND armed AND conflict (40 results)
- 2) environment AND governance AND war (263 results)
- 3) environment AND governance AND limited statehood (7 results)

The titles and abstracts of articles in Scopus were analysed based on the following inclusion criteria: it had to concern “environmental governance in conflict-affected areas” and be “written in English”. Language limits were identified for feasibility reasons. Irrelevant articles were

removed such as *“China’s War on Air Pollution: Can Existing Governance Structures Support New Ambitions?”* and *“Under Pressure: Conceptualising Political Ecologies of Green Wars”*. After the analysis, only 15 articles remained. Within the remaining articles, 4 articles were unavailable (including *“Environmental assessment as a tool for peacebuilding and development: Initial lessons from capacity building in Sierra Leone”* by Brown et al. in Ed. Jensen & Lonergan, 2012) further decreased the number of articles to 11. Time restrictions on the articles were not applied.

Google Scholar generated a significantly higher number of hits. The combination of keywords “environment” “governance” “war” produced 1.340.000 hits. Therefore, a decision was taken to further narrow down the search and set time limits for the study selection on Google Scholar. The most relevant result was achieved through the following combination: “environmental governance” “war” “armed conflict”. For the period of the last 20 years (literature since 1999), 1.900 hits were generated. Based on the same inclusion criteria “environmental governance in conflict-affected areas” the analysis of titles and abstracts reduced the list to 41. 4 out of 41 articles were unavailable. Initially, particular attention was paid to articles that had a higher number of citations. As Arksey & O’Malley (2005) suggest examining references led to the discovery and inclusion of 5 additional articles for the review.

Following the search on the website of UN Environment Programme (UNEP), combination “armed conflict” generated 49 hits and combination “war” – 106. Eventually, 4 articles were included in the literature list. Further, the leading website for the understanding of the environmental and associated humanitarian impacts of armed conflicts <https://ceobs.org> was consulted. The search for “environmental governance” on <https://ceobs.org> produced 42 relevant hits that were analysed and 8 articles and blogs were included.

Finally, the research was complemented with the materials (transcripts of lectures) available at MOOC on Environmental Security and Sustaining Peace by UN Environment, Environmental Law Institute, Columbia University, Duke University, University of California, SDG Academy.

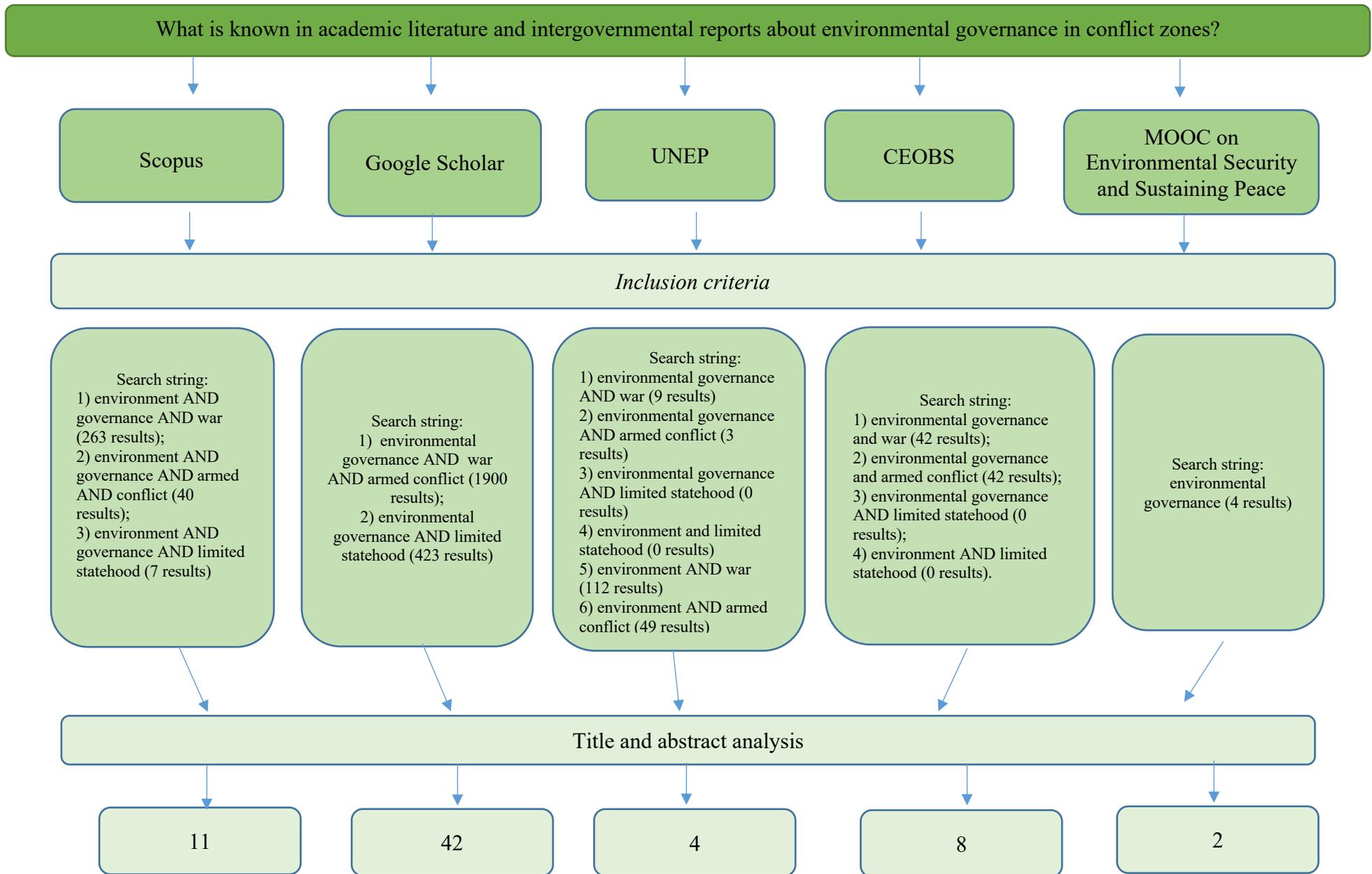


Figure 1: Flow Chart of the Scoping Study Process

2.3. Qualitative content analysis and charting the data: thematic coding criteria

In this thesis, coding was developed without the support of software (Berg, 2001; Weber, 1990). The categories were derived defining the keywords/search strings mentioned in section 2.2.1. The content analysis explored the text for content that: a) impact of armed conflicts on the environmental governance; b) environmental governance in ongoing armed conflicts; c) measurement and investigation of environmental governance in conflict areas; d) recommendations for improvement of environmental governance in conflicts. The results were then compared, cross-checked, and integrated together.

2.4. Development of the Analytical Framework for the Case Study

Selected articles were read in full and analysed in detail, in order to identify factors that impact environmental governance in conflict areas and could guide the development of the analytical framework. Categorizing and coding literature requires judgements to be made that can potentially affect the validity and reliability of the study through the subjective bias of the researcher (Beerens, & Tehler, 2016).

To cross-check categories identified in the literature review and allow further detailed desegregation of data per environmental sector (e.g. forest management, water management) a decision was taken to complement the literature review and the development of the analytical framework with the analysis of the structure of Environmental Performance Reviews (EPR) conducted by the United Nations Economic Commission for Europe (UNECE). As there is no precise definition of “environment” (see Annex I), it aimed to operationalize the analytical framework, making it practical, avoid the subjective bias of the researcher and facilitate the data analysis of the case study.

49 EPRs conducted across 24 United Nations Economic Commission for Europe (UNECE) member states in the period of 1996-2019 (since its launch until present) were examined. The choice of selecting UNECE EPR for the analysis was determined by the fact that it is one of the existing authoritative frameworks for evaluation of the progress by countries in improving their environmental policies and Ukraine is one of 56 UNECE member states.

The EPRs were analysed using a qualitative comparison to understand the common topics that were addressed in the structure of the documents following King et al. (1994). The first screening excluded categories that were country-specific, such as “*Management of selected problems in the Aral and Caspian Sea Region*” and “*Adriatic Sea Protection*”. The second screening defined sectors that implied similar jurisdiction or governance responsibility but could still be named referred differently (e.g. environment/ecology). Further, a synthetic list of 7 categories and 13 environment-related sectors (sub-categories under legal, policy and institutional framework) was derived. “Environmental consequences of an armed conflict” was mentioned in the structure of only one EPR but it was also added to the analytical framework as a sub-category. The categories identified through content analysis of the academic and grey

literature and complemented by content analysis of EPRs served to develop an analytical framework and are presented in Figure 2. Based on the findings received through the application of the analytical framework, conclusions can be made also on the level of prioritization of environment on the political agenda (depending on the needs of research also prior or during armed conflicts).

While the analytical framework was developed to examine the identified case study, it can be applied to explore environmental governance in other contexts. However, it is important to bear in mind that the context of each conflict is unique. Therefore, modifications could be required depending on the settings, e.g. whether the major actors involve the de-facto authorities, rebel groups or the affected state. For instance, rebel groups may state as literature review confirms environmental policies/their environmental approaches in their ideological doctrines, or establish customary rules and practices instead of normative acts issued by quasi-state institutions.

Analytical Framework for Assessing Environment Protection and Natural Resource Management

Legal, policy and institutional framework

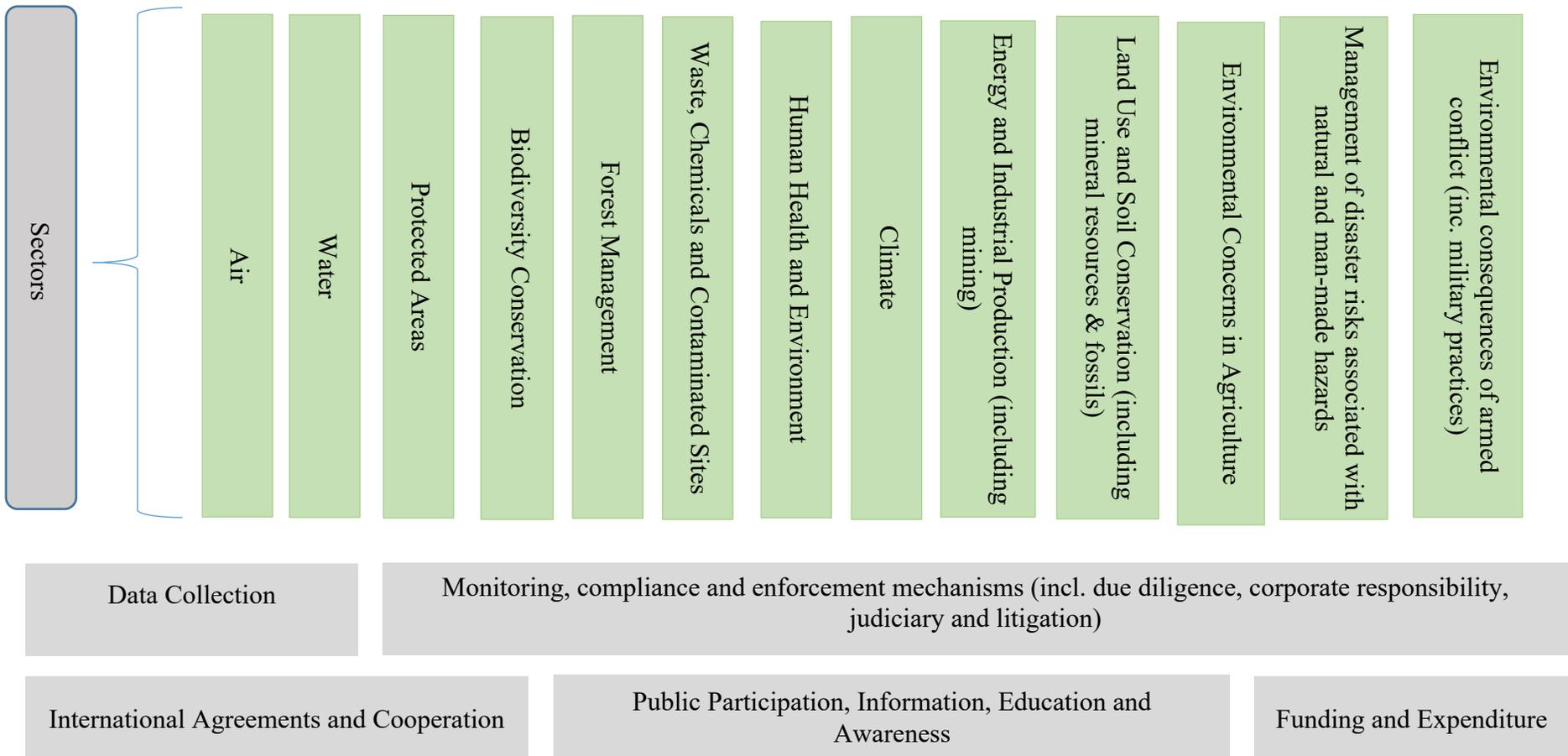


Figure 2: Analytical Framework for Assessing Environment Protection and Natural Resource Management

2.5. Limitations of the Literature Review

The inclusion of grey literature has its advantages and disadvantages. Grey literature is often produced by experts in the field and represents research at its initial development. Given the significant time lag between research and publication, the use of grey literature can help to uncover innovative information and to shorten the time between research and practice. The key disadvantage is that it does not undergo the same level of scrutiny prior to publishing as a peer-reviewed article. The quality of peer-reviewed articles, credibility and accuracy are ensured by the editorial board or a peer reviewer according to the predefined standards (Pappas & Williams 2011). This limitation is addressed in the research by including grey literature only from authoritative sources, such as the UNEP and CEOBS.

To ensure feasibility, language limitations had to be introduced. The literature review was restricted to academic and grey literature available in the English language. It is acknowledged therefore that literature in other languages that could have been potentially relevant for the study was omitted.

Unavailability of a number of articles relevant to the study in the library is seen as a limitation of this study. It is acknowledged that as a result several potentially relevant articles were omitted from the review.

The subjective bias of the researcher in categorization factors in the content analysis (Beerens & Tehler, 2016) and developing the analytical framework was addressed by documenting the process and supplementing it with the review of the structure of UNECE EPRs to cross-check categories (see section 2.4.).

2.6. Case Study Methodology and Limitations

The websites of de-facto authorities in Luhansk People's Republic and Donetsk People's Republic were examined, with particular focus on mandates, policies, legislation, annual and quarterly activity reports, and statements. The language of materials available on the websites was Russian. The de-facto authorities have an active online presence and vast amounts of data available on their websites. The list of examined websites is provided in Annex II.

Coding was developed without the support of software (Berg, 2001; Weber, 1990). The coding criteria were derived from the categories identified in the Analytical Framework. The results were then compared, cross-checked, and integrated. The qualitative comparison of primary and secondary sources was undertaken supported by a qualitative content analysis for category and content as suggested by King & Verba (1994).

As Oliver (2001, cited in Arksey & O'Malley, 2005) notes the research can be improved and made more useful if practitioners in the field are consulted. Contacting existing networks can produce information about primary research as suggested by a number of researchers (e.g. Badger, Nursten, Williams & Woodward, 2000 cited in Arksey & O'Malley, 2005). Thus, to

cross-check availability of resources, professionals in the field were contacted. It resulted in additional four documents added.

There were a number of limitations but they did not compromise the results. The key challenge of the research stems from the high politicization of the topic and its political sensitiveness. Missing facts, hidden agendas, contradicting facts, fragmented information and high degree of ambiguity are common for research in conflict settings (Van der Haar et al 2013). The environmental policies might be developed as part of propaganda efforts to appease international or domestic constituencies (Sommer, 2015). In parallel, official statements of the national government might also be politically motivated. Weir (2019) notes that selective political framing and weaponization of environmental information is a growing challenge. However, the lack of neutrality of accounts is not necessarily a problem. Scholars in the field of anthropology (Bourgeois, 1990; Nordstrom and Robben, 1995; Sluka, 1995; Nordstrom, 1997; Kovats-Bernat, 2002; Richards, 2005; Vlassenroot, 2005, cited in Van der Haar et al 2013) suggest that understanding how local actors make sense of violence, insecurity, and contestation can be crucial in research on conflict settings (Van der Haar et al 2013). Therefore, it is an intrinsic part of the context and the research in conflict settings, rather than limitation.

Finally, the case study is context-specific. Therefore, its findings are not applicable to all contexts. However, the literature review balances this limitation by covering a wide range of contexts.

Chapter 3 Review of the Academic and Grey Literature

3.1 Environmental Governance in Armed Conflicts.

The analysis of academic and grey literature focusing on content related to environmental governance in armed conflicts has resulted in a number of themes grouped in four overall categories: “demise of environmental governance”, “key governance actors”, “investigating environmental governance in armed conflicts”, “external support and international instruments of governance”.

3.1.1. Demise of environmental governance

The governance structures in armed conflicts are frequently weakened (Brauer, 2009; UNEP, 2019). Amongst factors that can be associated with the weakened governance systems and the breakdown of environmental governance in armed conflict, the literature review has identified the following inter-related themes/factors:

- *Under-prioritization on the Policy Agenda.* Capacity for environmental policy coordination as the result of conflicts is often decreased (Brauer, 2009; UNEP, 2019). In parallel, while environmental governance and natural resources management present fundamental challenges for conflict-affected societies (Conca & Wallace, 2009; Kovach & Conca., 2016), their importance is either underemphasized in relation to other concerns or appear completely absent from the policy agenda (Kovach & Conca, 2016). Meanwhile, regarding the environment as a secondary concern presents a systemic barrier to effective mainstreaming and reducing the harm to the civilian population (Weir, 2015b). The fact that protection of environment in armed conflicts is underemphasized in the policy agenda, can be well illustrated by the example of the analysis of UNECE EPRs. Only one EPR had a dedicated section on "environmental consequences of armed conflicts" even though multiple UNECE member states were affected by conflicts in the review timeframe.
- *Cut Funding.* Conflicts often lead to cuts of governmental spending on environment (Hamman et al., 2018; Jensen, 2019) and collapse and disruption of environmental investment (Jensen, 2019). The financial resources usually allocated for environmental management and law enforcement might be redirected to war needs (Bruch, 2019);
- *Hindered Data Collection, Environmental Monitoring and Information Sharing.* Environmental monitoring, data collection and information sharing on the state of environment are hindered (Conca & Wallace, 2009; Manson, 2011; Jensen, 2019; Huggins, et al, 2006). Governmental capacity for environmental assessment can be overwhelmingly diminished by conflict conditions, leading to impacts on health and livelihoods being unreported (Bolton & Weir, 2015);
- *Decrease in Human and Technical Resources.* In armed conflicts evacuation of staff or fleeing the country for personal security reasons may take place. It leads to brain drain and loss of expertise in the field (Bruch, 2019). In parallel, equipment and infrastructure may be abandoned (Hanson, 2018), looted, destroyed, left without fuel, electricity, spare parts, etc. Destruction of land registration documents, environmental information,

materials, and laboratories during conflicts, also leaves governance structures vulnerable (Conca & Wallace, 2012, cited in Jensen & Kron, 2018);

- *Hindered Law Enforcement.* Conflicts often lead to deterioration of administrative protection and environmental enforcement (Hamman et al., 2018; Jensen, 2019). Environmental laws are repeatedly waived or ignored during a military confrontation (Hanson, 2019). In the created institutional vacuum, governance norms can be ignored for the personal interests of public servants; a culture of impunity and illegality is installed (Matthew et al., 2009). Governance vacuum is almost systematically exploited by a combination of predatory individuals, armed groups and transnational criminal networks (Jensen & Kron, 2018). For instance, known cases include the alleged practice of industrialised countries to dump hazardous (nuclear and toxic) waste in Somalia in conditions of conflict, political instability and lack of awareness (Conca & Wallace, 2009; Kellay 2014), forest governance collapse in Liberia as well as the collapse of water management systems in Afghanistan (Conca & Wallace, 2009; Jensen & Kron, 2018); looting of former scientific and industrial laboratories for radioactive materials as well as the functioning of illegal unregulated oil refineries in Chechnya, leading to high levels of pollution (Kellay, 2014). Revenues from the illegal resource can be used by armed groups to fund their activities or by illegal organized crime networks. Enlargement of criminal exploitation of natural resources commonly follows governance breakdown (Jensen, 2019). The study conducted by UNEP and peacekeeping mission (MONUSCO) in Eastern DRC in 2015 concluded that 98 percent of revenues from illegal resource theft went to transnational organized criminal networks, rather than to armed groups.
- *Long-Term, Low-Intensity Civil Wars vs. Short-Term International Armed Conflict.* Environmental governance can be impacted differently depending on the type of conflict. Indirect environmental consequences of the collapse of governance and natural resources degradation have been associated with long-term, low-intensity civil wars, while particularly serious pollution threats with short-term international armed conflict (ILPI, 2014, cited in Weir et al., 2019);
- *Critical Importance of Environmental Governance for Environmental Hot Spot Remediation.* Weakened environmental governance amongst other factors makes environmental hot spot remediation in conflict areas particularly challenging (Jensen & Lonergan, 2012). Environmental hot spot remediation is critical for the protection of human health and prevention of degradation of critical resources such as drinking water and fertile land. Therefore, it should be considered a humanitarian priority (Briggs & Weissbecker 2012; Thummarukudy et al. 2012, cited in Jensen & Lonergan, 2012);
- *Bottom-Up Initiatives.* Although environment may be considered a low priority for communities in an ongoing conflict, there is an increasing number of cases where individuals, local civil society or community groups continue to implement environmental projects during conflicts or contribute to humanitarian initiatives to map environmental resources or to assess damage (ICRC 2015b, cited in Weir et al 2019);
- *Systemic Interconnectedness.* Research also demonstrates the interconnectedness of systems. For instance, the suspension of farming is related to the rise of the rodent mice

population poses additional health risks to the people (UNEP, 2018). The suspension of hunting can lead to the increase of wolf population attacking local inhabitants and the cattle. Increased exploitation of natural resources (Hamman et al., 2018) and land tenure insecurity often leads to a lack of interest in sustainable practices (Jensen, 2019).

3.1.2 Key governance actors

The following themes have emerged based on the analysis of literature in regards to key governance actors in armed conflicts:

Multiple Combinations of Governance Actors. Conflict areas, areas of limited statehood or state failure are often believed to be anarchic. However, the literature indicates that “[t]he limited government presence does not mean that there is a lack of governance” (Bruch et al., 2016). Although environmental governance is unlikely to be consistently effective (Hamman et al., 2018), governance can continue in areas of limited statehood when the state institutions are dysfunctional (Borzel & Risse, 2015). Multiple combinations of actors (state and non-state) found co-governing in areas of limited statehood, may include stakeholders such as national government, international intergovernmental organizations, international non-governmental organisations, foreign states, private companies, and public-private partnerships (Risse, 2012). Industries might have market incentives pressure from other actors, e.g. NGOs to correspond to environmental standards (Börzel & Thauer 2013; Prakash & Potoski, 2006; Smith, 2008; Spar & La Mure 2003, cited in Hamman et al. 2018). In the areas of “frozen conflicts”, incentives may include access to foreign markets. For instance, Transnistrian companies are registered in Moldova for export licenses, as it is the only way for them to export, including to the EU market (Grund et al, 2011).

Long Term Objectives and Self-Organization of Local Communities. Governance is particularly important for groups that have long-term objectives (Berti, 2018). We may assume that local authorities (and community management structures) are the closest to people, and may stay on in the conflict-affected region. Evidence demonstrates the phenomenon of local communities at times being able to forge governance arrangements for basic levels of security and rule of law (Menkhaus, 2007). Self-regulation can take place (Börzel et al., 2011, cited in Risse, 2012).

The literature also mentions “shadow” or “quasi-states” (Koehler and Zürcher, 2004; Zürcher, 2007, cited in Risse, 2012) when informal governance institutions substitute formal state ones to prevent the region or the country from total collapse (Risse, 2012). “Hybrid sovereignty model” meanwhile is characterised by cross-contamination of the state and non-state actors, which grow difficult to distinguish between each other (Fregonese, 2012, cited in Berti, 2018).

Social Trust and Claims of Legitimacy. In certain cases, local armed groups can act as co-governors (Chojnacki & Branovic 2011, cited in Risse, 2012). The relationships developed between armed groups as alternative governors, civilian populations and other stakeholders vary (Berti, 2018). While generally, the armed groups’ governance focuses on the provision of security (Berti, 2016; Kilcullen, 2013, cited in Berti 2018), it may also include the provision of such basic services as health and education (Berti, 2018). The armed groups may complement or replace the state in areas of limited statehood providing basic public services and goods to

the civilian population (Berti, 2018) if they are presented an opportunity to benefit from protecting the population (Jo & Bryant 2012; Chojnacki & Branovic, 2011). Delivery of public services by a non-state governor can also be regarded as an investment in the validity of its claims for legitimacy (Berti, 2018). Social trust as a crucial enabler (Borzel & Risse, 2015). Support of the civilian population in insurgencies is important and can be a decisive factor (Connable & Libicki, 2010). It allows violent non-state groups to “strengthen their bonds with the civilian population in areas where they actively operate” (Jo, 2015; Kilcullen, 2013, cited in Berti, 2018, p5). It is noteworthy that militants or rebel groups can be interested in complying with international law as it increases their legitimacy (Risse, 2012) or/and to fulfil state-building aspirations (Berti, 2018). It may be for the same reason that although environmental protection during conflict could be impossible without Non-State Armed Groups (NSAGs), stakeholders may avoid engaging with them as they could be concerned with providing them with any legitimacy (Somer, 2015). A number of NSAGs, although a minority, have doctrines on environmental protection. Furthermore, a number regard environmentally destructive operations and destruction of wildlife resources including by multinational corporations and other big businesses as a legitimate ground of military attack. In the case of National Democratic Front of the Philippines, in view of widespread disaster risks such attacks are also justified by NSAG as a “proactive form of disaster prevention” (Somer, 2015)

Engagement of NSAG as a Tool for the Protection of the Population. Engagement of NSAGs is considered an important tool for the protection of civilians in multiple UN guidelines, policies and the UN peacekeeping mission practices. For instance, the United Nations Multidimensional Integrated Stabilization Mission in the Central African Republic revised its standard operating procedures to emphasize that its staff not only allowed but expected to engage with NSAGs where relevant (Mamiya, 2018). The need for NSAG humanitarian engagement has been highlighted in the UN Secretary-General Reports (Somer, 2015). While non-state armed groups (NSAGs) are part of the problem, they can also be a part of the solution bringing important capacities (Somer, 2015) as some of the key stakeholders (Weir, 2015a). Nevertheless, NSAG engagement mainly focuses on such protection topics as sexual violence, humane treatment and the use of land-mines. The limited attention paid to environmental protection with the engagement with NSAG evolves from the limited attention paid to environmental protection in the International Humanitarian Law (Somer, 2015; Weir, 2015b).

3.1.3 Investigating Environmental Governance in ongoing conflicts

The following themes have been identified within the overall category through the review of academic and grey literature:

Value of Data. It is acknowledged that reliable data are crucial to reducing risk and providing the right assistance to affected people (e.g. Kellay 2014). Measures to address environmental damage from conflicts and mitigate their impact on people, ecosystems and sustainable development may depend on the availability of environmental data from conflict-affected areas (Weir et al., 2019). Poor data on governance can translate into poor policies, while better data can enable policymakers to better monitor developments and to make better-informed decisions (Stollenwerk, 2018). Multiple governance assessment methodologies in ongoing armed

conflicts have emerged over the last past decades varying in scope, purpose, approach, and use. For instance, they can serve to provide an overview of the situation, analyse different approaches and trends, to provide criteria for urgent intervention, to strengthen local capacity and to serve as a basis for a dialogue between the state and the people providing an accountability mechanism (UNDP, 2012). Understanding existing governance arrangements and frameworks should be considered critical for any assessment (Jensen, 2012).

Lack of Frameworks for Examining Environmental Governance in Ongoing Conflicts. The study did not identify publicly available guidelines and frameworks from authoritative sources for examining environmental governance, neither specific qualitative or quantitative approaches to investigating environmental governance in ongoing conflicts. The closest relevant assessment framework relates to the post-conflict phase. Post-Conflict Environmental Assessments (PCEA) are mainly undertaken by UNEP on the invitation of governments and assess direct, indirect impact, as well as governance needs after the conflict (Jensen & Kron, 2018) and, are often limited in scope (Weir et al., 2019).

Common Methodologies and Practices for Governance Assessment. The literature review, nevertheless, pointed out common methodologies and practices in investigating governance in conflict areas, innovative methods to gather data on governance in conflict areas, as well as common barriers. Most governance assessments in conflict and fragile settings rely predominantly on secondary data and published information, supplemented sometimes by a limited number of ‘expert’ interviews. Few manage to effectively combine secondary information (e.g. desk-based reviews, media analysis) with primary data collection through multiple methods such as key information interview, focus group discussion, surveys and opinion polls (UNDP, 2012).

Common Challenges in Governance Assessments. Measures of governance have significantly improved over the last decades (Stollenwerk, 2018). But the conduct of research might be fraught with difficulties (Kellay, 2014). The following barriers may often represent a significant impediment in assessments, making the collection of high-quality survey and non-survey data challenging: *technological capacity and breakdown of infrastructure, limited access to sites due to security concerns and political sensitiveness.* Data collected in armed conflict are subject to political contestation (Weir et al 2019). Political motivations may lead to obscuring data, non-releasing real-time data and preventing access to the field (Atlin, 2014; UNDP, 2012). Selective framing of environmental damage and politicization of environmental information may take place, making environmental peacebuilding and efforts to build trust between conflict parties more challenging (Weir & Denisov, 2019). Furthermore, assistance measures of environmental ministries might be used or perceived as a political tool, thus increasing distrust in national authorities (Weir et al, 2019). In parallel, governance assessments by bilateral and international agencies to guide their interventions might be classified as non-public or open to a limited number of external stakeholders (UNDP, 2012). While international organizations, e.g. UNEP, OCHA, OSCE and a number of civil society organizations collect environmental data during conflicts, *data sharing is underdeveloped and uncoordinated* (EHA CONNECT 2019, cited in Weir et al., 2019). Another challenge arises in regards to documenting exposure and health outcomes of populations affected by conflict: *the lack of comprehensive approach*

in merging environmental data, biomonitoring data and data on health outcomes (Weir, 2015b), which is not a conflict specific-problem but rather a general challenge. Most quantitative data on governance also lack reliability and does not include contributions of non-state or external actors (Stollenwerk, 2018).

Limited Data on External and Non-State Actors. Little data is available on the presence of external and non-state actors, their effectiveness in governance provision, or how the local population perceives them (Stollenwerk, 2018) but its availability is increasing (Chojnacki et al., 2012; Raleigh et al. 2010; Tierney et al. 2011, cited in Stollenwerk, 2018).

Environmental Data as a Tool to Improve Governance and Innovative Methods. Environmental assessments provide an overview of the environmental situation which is used to create tools for improving governance (UNDP, 2012). Furthermore, monitoring of the environmental, health and financial costs can enhance domestic military practices (Kellay 2014).

Innovative methods to gather data to enhance governance measurement and our knowledge on governance in areas of limited statehood can include, for instance, the use of satellite technology (Huntington & Wibbels 2014; Pech, 2017), crowd-seeding and crowd-sourcing (Pham & Vinck, 2012) and survey experiments (Dietrich & Winters, 2015). The advances of spatial techniques to monitor, research, verify the state of the environment and plan for solutions make it also an important tool supporting the investigation of governance in conflict areas, especially when security concerns limit access to sites. Remote sensing and open source data collection are progressively used to identify and estimate the health and ecological risks during conflicts. However, it is suggested that remote monitoring needs to be complemented by action on the ground (Weir et al, 2019). Citizen science or community-led approaches are also increasingly used for monitoring environmental hazards in insecure or politically contested contexts (Phys.org 2018, cited in Weir et al., 2019), or to bear witness to harm (Fiske 2018, cited in Weir et al 2019). OSINT/open-source investigation projects such as Bellingcat combine the use of crowd-sourcing and satellite imagery (Bellingcat 2019, cited in Weir et al 2019). While they are primarily focused on identifying responsible parties for events such as chemical weapons attacks in Syria, part of their activities focus on identifying environmental risks and damage (Bellingcat Investigation Team, 2015; Khachatryan, 2017; Zwijnenburg, 2018, cited in Weir et al, 2019).

3.1.4 External support and international instruments of governance

Limited External Governance Support and Strategies to Maintain Capacity. Affected states with reduced capacity often receive very limited external support to manage environmental damage (Kellay, 2014). However, there are also known cases of governance support during war e.g. support to local staff of protected areas to reduce rates of illegal activities such as deforestation and poaching (Hanson, 2018). For instance, different strategies are suggested (Oglethorpe et al., 2004) to maintain the capacity for effective conservation in areas of conflict. Nevertheless, the literature review could not identify a comprehensive overview of strategies for providing support for environmental governance in armed conflicts.

Limitations of International Instruments to Protect the Environment. Conflict can result in disengagement from trans-boundary environmental institutions and multilateral as well as environmental bilateral and multilateral agreements (Jensen, 2019). Nevertheless, an important instrument of international governance is international public law. Provisions protecting the environment in conflicts can be found inter alia in International Humanitarian Law, International Criminal Law, International Environmental Law, as well as International Human Rights Law (UNEP, 2009). However, the international framework remains a work in progress, as there are significant gaps particularly with respect to non-international armed conflicts, implementation, and mechanisms of enforcement (Bruch, 2019; UNEP, 2009), its content is not always easy to interpret (Fleck, 2017). As a matter of fact, the majority of international law provisions do not apply to non-international armed conflicts (Bruch, 2009). The International Law Commission adopted 28 legal principles on the protection of the environment in relation to the armed conflicts in 2019. However, the responsibility of non-state armed groups for environmental damage remains unaddressed. The International Committee of the Red Cross is expected to issue revised military guidelines. There two sets of international instruments for the protection of the environment in conflict are to be considered complementary (Pantazopoulos, 2019).

The discourse that is present in the literature on environmental governance evolves around international and non-international armed conflict. The adequacy of such an approach can be questioned as it does not reflect the complexity of modern warfare, e.g. internationalized conflicts, as well as different stages of armed conflict, e.g. active armed conflict, “frozen conflict” (see Annex I: Concepts and Definitions).

Mechanisms and constraints to protect the environment during hostilities are limited, resulting in an imbalance between military necessity and requirements to protect the environment (Weir, 2015a). However, the UN Security Council (UNSC) in recent years has been gradually treating it as a matter of international security. A recent spike in addressing environmental issues by the UNSC has been observed. More than 300 Security Council Resolutions issued over the period of 1946-2016 mention natural resources and the environment. They are, however, rather technical than normative in nature. The debate on whether the environment should be securitized is ongoing (Aldinger et al., 2018). UN Security Council recognizes the role natural resources play in financing and driving conflict and may require reform of governance if sufficient evidence is found (Cockayne et al. 2010 cited in Aldinger et al., 2018).

Opportunities connected to Peacekeeping. A number of initiatives emerge on linking environmental protection and peacekeeping. For instance, the Environment and Security Initiative (ENVSEC), an inter-agency initiative of six international organizations comprising UNEP, UNDP, the Organization for Security and Cooperation in Europe (OSCE), the UN Economic Commission for Europe (UNECE), the Regional Environmental Centre for Central and Eastern Europe (REC) and the North Atlantic Treaty Organization (NATO) as an associated partner “builds on the vision that good environmental governance and transboundary cooperation may provide a crucial pathway for building stability, peace and sustainable livelihoods” (Gaia Consulting Oy, 2010, p.5). The UN Environmental Cooperation for Peacebuilding programme supports peacebuilding efforts through environment and natural

resources management dimensions (UNEP, n/d), also as it is considered that protection of the environment during a military conflict has the potential to enhance security and facilitate peacebuilding (Conca & Wallace, 2009; NATO, 2014; Yaari et al. 2015).

Furthermore, peacekeeping missions in active conflict situations may be required to address the illicit exploitation of natural resources by using military measures, and by supporting reform of existing governance structures (Aldinger, et al 2018). As natural resource management and environmental protection is closely interlinked, it is fair to assume that peacekeeping missions are similarly capable of supporting environmental governance.

3.1.5. Recommendations

Additionally, to answer R4 analysis was conducted of recommendations identified in the academic and grey literature. Recommendations for improving environmental governance revolve around five key themes:

Peacebuilding Tool and De-Politicization. Environmental governance measures can be regarded as an important indirect peacebuilding tool as demonstrated by research (Brooke & Matthew, 2016), e.g. river commissions and water management as common interest aka catalyst (Waisová, 2017). Environmental planning, facts and science-led can help depoliticize sensitive disputes. Depoliticization of sensitive disputes over the environment and natural resources can have a spillover effect on other dimensions of governance such as increasing transparency and increasing legitimacy of the government (Brown, Hauptfleisch, Jallow, & Tarr, P, 2012). It is suggested to incorporate environmental protection in the mandate of UN peacekeeping missions (Weir, 2015a). The perception of the environment as a comparatively unpolitical object of common concern can also serve as an entry point for discourse in contested settings (Yaari et al. 2015).

Improved International Legal Framework and Its Operationalisation. International legal framework for environmental protection although under further development remains unfit for non-international military conflict. Therefore, it is important to enhance the international legislative framework (including in regards to non-international conflicts) and operationalize it. Clear legal guidance on environmental obligations for the policymakers and the military could be essential in decreasing unnecessary human suffering and environmental damage (ILC, 2011). International law aimed to protect the environment and natural resources is operationalised through 1) national legislation codifying international law; 2) military manuals and training; 3) staffing aka allocation of sufficient human resources for implementation; 4) reporting on compliance e.g. reporting on the implementation of the resolution UNEP/EA.2/Res.15, acting a significant platform for information sharing on the progress (Bruch, 2019);

NSAG Engagement. While de facto authorities and NSAGs have certain environmental governance capacities, organizations may avoid engagement with NSAGs from fear of providing them with legitimacy. It is fair to assume that development of policies and guidelines by the UN on environmental engagement with NSAG and de-facto authorities in conflict areas without compromising the Westphalian system would bring significant value to the process. It

is also suggested (e.g. Weir, 2015a) to consider strategies for the promotion of environmental protection among NSAGs.

Increasing external support in the field of environmental protection and governance, playing an enabling role such as through training, the provision of equipment or capacity building. Local civil society organisations, first responders e.g. mine action and humanitarian NGOs, academic institutions and relevant international organisations (UNEP, 2018); ICRC should continue enhancing its engagement on the topic (Weir, 2015). It is fair to assume ICRC's enhanced engagement is particularly relevant due to its vast experience of sensitive field operations in armed conflict, through its monitoring, catalyst, watchdog, promotion, guardian angel and direct action functions.

Enhance data collection, coordination of environmental data sharing and environmental monitoring. It is recommended to enhance and ensure coordination of environmental data sharing. Analysis of data collected during or shortly after conflicts related to the state of the environment can be made available directly to specific humanitarian actors working on relevant issues with the humanitarian cluster system (e.g. WASH), a wider range of entities through multi-sector needs assessment mechanisms as well as geographically focused response and recovery platforms (UNHABITAT, 2015, cited in Weir et al., 2019).

In parallel, the use of innovative methods brings additional opportunities for improving environmental governance. Current spatial techniques combined with actions on the ground can support investigation of governance in conflict areas (especially when security concerns limit access to sites), ensuring early warning and support the development of policies and activities for environmental protection in conflict. For instance, Geographic Information System for environmental monitoring in areas of armed conflict can be used to calculate a risk indicator for environmental degradation, making it possible amongst other to identify the main threats to protected areas, catalogue the damage caused to the environment by armed conflicts and create a dynamic risk map (Mobaied & Rudant, 2019). Citizen science may serve as a tool for environmental cooperation and peacebuilding, monitoring, civilian protection and the advancement of environmental human rights, enhancing community awareness of conflict-linked environmental problems and risks (Weir et al., 2019). However, it is likely that any use of citizen science would require careful planning and tailored approach to the context in line with "Do not Harm" principle. For instance, it is fair to assume that the use of citizen science can be challenging in areas not controlled by the government, where any systematic leak of information may be seen as espionage.

An additional recommendation has been developed within the present thesis related to data collection and information sharing:

To inform policy responses it is suggested to mainstream environmental considerations into governance assessment frameworks and critical information support in conflicts and high-risk areas. It can be supported by development of guidelines or frameworks for evaluation and assessment of environmental governance in ongoing conflicts, and supplemented by awareness-raising and advocacy efforts.

3.2. Conclusions and gaps in the state of art: environmental governance in armed conflicts.

Research Question 1 (R1). The literature is unanimous that armed conflicts negatively affect environmental governance. The literature review identified multiple themes in the field of environmental governance in armed conflicts, highlighting the interdisciplinarity, complexity of the topic as well as *Systemic Interconnectedness*. Addressing issues related to environmental governance requires joint efforts of environmental protection and disaster risk experts, governance experts, political scientists, conflict resolution and peacebuilding experts, health specialists, international law specialists, criminologists and security experts. It is fair to suggest that it can hardly be fully comprehended and needless to say tackled in isolation.

Environmental governance structures are frequently weakened in armed conflicts. Multiple factors are associated with the demise of environmental governance: *Under-prioritization on the Policy Agenda, Cut Funding, Hindered Data Collection, Decrease in Human and Technical Resources and Hindered Law Enforcement*. Environmental governance has been particularly affected in *long-term, low-intensity armed conflicts/civil wars*.

However, the breakdown of the capacity of the government in the conflict area does not signify the absolute lack of environmental governance. Despite the fact that environment can be considered a low priority, an increasing number of cases emerge when individual, local civil societies and community groups continue environmental projects and activities during armed conflicts. The research on areas of limited statehood provides a valuable contribution to understanding environmental governance in conflict areas. It demonstrates that various combinations of actors may also be involved in environmental governance provision. For instance, there are cases of self-organisation of communities as well as the provision of basic services by non-state armed groups (NSAGs) which *have long-term objective, seek social trust of local communities, or aim to support claims of legitimacy*. And while the engagement of NSAGs is encouraged at the high-level in the UN in the humanitarian context, NSAGs capacity remains primarily untapped or underutilized in the field of environmental protection in conflicts i.a. due to deficiencies in international law. The lack of strong environmental protection mechanisms in international law and other *Limitations of International Instruments to Protect the Environment*, the lack of prioritization of environmental protection during armed conflicts result in significant challenges. Despite the discourse on environmental securitisation in the UN Security Council, conflict-affected states receive *Limited External Governance Support in environmental governance and managing environmental damage from conflicts*. In parallel, literature identified existence of strategies to maintain environmental governance capacity during armed conflicts (e.g. to maintain the capacity for effective conservation in areas of conflict) as well as *Opportunities connected to Peacekeeping*, including comprehension of environmental protection as a peacebuilding tool.

Research Question 2 (R2). The review of the literature identifies *Common Methodologies and Practices for Governance Assessment, Common Challenges in Governance Assessments* in armed conflicts, including *Limited Data on External and Non-State Actors* and underlines the value of *Environmental Data as a Tool to Improve Governance and Innovative Methods*. The

availability of data is crucial for the development of appropriate policy and timely responses. Fraught with challenges, measurement of governance in general in conflict areas have significantly improved over the last decades. However, while answering R2, it becomes evident that the literature does not elaborate how environmental considerations and governance fit into wider governance assessments conducted in armed conflicts. There is a *Lack of Frameworks for Examining Environmental Governance in Conflicts*. The political dimension of examining environmental governance in conflicts is inevitable. Rather than seen as a limitation, it is to be acknowledged as an intrinsic part of the context – and the subject of a study.

Research question 4 (R4). The recommendations for improving environmental governance in academic and grey literature revolve around 5 themes: The use of Environmental Protection as *Peacebuilding Tool and De-Politicization*, *Improved International Legal Framework and Its Operationalisation*, *NSAG Engagement*, *Increasing external support in the field of environmental protection and governance*, *Enhance data collection, coordination of environmental data sharing and environmental monitoring*.

The present thesis suggests the following areas for further research:

- It is suggested to investigate how environmental management is addressed /included or not included within existing multiple governance assessments and critical information management support in conflict and high-risk areas, identify common approaches, best practices, trends, challenges and provide recommendations.
- The role of external state actors in environmental governance supporting non-state armed groups is not addressed in the literature. It can be addressed in separate research because external state support is common in insurgent movements. “Since 1980, 75% of insurgencies have been externally supported” (Patten, 2013, p 878). Non-state armed groups usually maintain relations with a number of states, on top of the ‘host’ state (Berti, 2018). According to the quantitative analysis provided by RAND corporation, the success rate of insurgencies without external support is minimal, about 18% (Connable & Libicki, 2010, p.62, cited in Patten, 2013). It is also noteworthy that once external support is withdrawn, the performance of the insurgent movement is declining (Connable & Libicki, 2010).
- In parallel, the extensive use of Private Security Companies (PSCs) globally represents a growing challenge for environmental protection in conflict areas, amongst others due to the lack of oversight and accountability (Das & Kellay, 2017). Further research is also suggested to explore the environmental governance consideration of PSCs, the issues of the liability of the hiring states and non-state actors.
- A separate research is suggested focusing on the role of environmental governance in environmental peacebuilding processes.

Chapter 4: Case Study Analysis

4.1 Introducing the Case Study of eastern Ukraine

An armed conflict in eastern Ukraine (Donbass region) started in March 2014. The Ukrainian Government lost control of part of the territory and “Donetsk People's Republic (DPR)” and “Luhansk People’s Republic (LPR)” were self-declared (see Image, UN OCHA 2020a). The



Eastern Ukraine with the 427-km long "contact line" and five checkpoints

quasi-state institutions were established based on adopted constitutions in 2014 in the Luhansk and Donetsk’s People republics. The institutions possess staff, have internet presence and implement various information campaigns (Fischer, 2019).

There is no consensus whether the situation in the eastern region of Ukraine is of international or non-international character. The International Criminal Court indicates in the Report of the Preliminary Examination of Activities that evidence points to existence of both international and non-international armed conflict in Donbass (ICC, 2016; Weir, 2018).

Statistics of the death toll vary by the source. Civilian and military casualties are in the thousands. But there are wide concerns that the

official numbers are under-represented (Hook & Marcantonio, 2018). According to the data of the European Commission, 3.5 million people need urgent humanitarian assistance in eastern Ukraine (EC, 2019b; UN OCHA, 2020b). Almost 60% of families living within the 5-km of the “contact line”, do not have access to hospitals and medical services (Protection Cluster & Health Cluster-Ukraine, 2019). Nevertheless, largely unknown outside of Ukraine, environmental damage from the conflict might become the longest lasting and difficult consequence to mitigate (Hamilton, 2019). Overview of environmental situation in Donbass is provided in *Table 1*.

Both Ukrainian government and de-facto authorities raise strong concerns of a potential environmental catastrophe. The Minister of Ecology and Natural Resources of Ukraine and Ukrainian experts refer to Donbass as potential “Second Chernobyl”, that risks turning into a contaminated area unsuitable for habitation (McLaughlin, 2018; Hamilton 2019). They state that flooding of Yunkom can lead to the environmental disaster in Ukraine and all countries of the Black Sea basin. Meanwhile, de-facto authorities claim that there is an ongoing “ecocide” by the Ukrainian government (MPRLNR, 2019). According to the statement of the de-facto authorities, the threat of ecological disaster to the territory of LPR primarily evolves from the economic decline in Ukraine, corruption and environmental mismanagement in the Ukrainian government-controlled territories of Donbass.

Table 1: Overview of Environmental Situation in Donbass

Environmental issues in eastern Ukraine predate the ongoing conflict (OSCE, 2017). For instance, also referred as “one of the most heavily industrialized areas on Earth” (CEOBS, 2018), eastern Ukraine before the military confrontation had about 5,500 industries which together produced 44% of Ukraine’s emissions (UNEP, 2018) and encompassed about 4,500 potentially environmental hazardous businesses operating only in Luhansk and Donetsk regions (OSCE, 2017). 2,160 industrial sites were considered potentially explosive due to methane content and 24 due to radiation hazards. Additionally, 909 sites were listed as hydro-dynamically hazardous and 34 as biohazardous (Hook & Marcantonio, 2018).

The commencement of hostilities made the situation particularly dire (OSCE, 2017) and increased environmental risks (UNEP, 2018a). Available information suggests the risk of technological incidents has increased dramatically, e.g. about 500 incidents were reported in 2014-2017 that could pose risks to the population and the environment. More than 80% of the enterprises and critical public infrastructure damaged during combat operations belong to “dangerous” or “very dangerous” environmental-risk categories (OSCE, 2020)

Its land, terrain, surface as well as subterranean waters, vegetation and wildlife sustained damage as the result of the military operations (OSCE, 2017). Decontaminating unexploded ordnance might take decades (UNEP, 2018). The conflict significantly impacted ecosystems and 150,000 hectares of forests, which play a critical role in wind and water erosion protection (UNEP, 2018a). Over 78 conservation sites have sustained damage than due to military operations (OSCE, 2020).

The Siverskyi (Seversky) Donets River, the most polluted river in Ukraine before the breakout of hostilities, was further contaminated during the conflict. It flows into the Don river in Russia which is the main source of water for the population living along it (UNEP, 2018a). The U.N. warned repeatedly of a potential chemical disaster as a result of occurred shelling of water filtration facilities e.g. Donetsk and Verkhokalmiuska water filtration stations (OHCHR, 2017).

Throughout Donetsk and Luhansk regions, there are over 900 active and inactive mines (mainly coal mines). About 200 of them were considered at risk of flooding owing to groundwater aquifers and flows. Their maintenance is currently hindered (Hook & Marcantonio, 2018). A large number of industrial mines were flooded, creating conditions for a life-threatening environmental disaster (OSCE, 2017). It is noteworthy as experts explain mines are interconnected systems. The linkage between mines aims to allow miners to reach surface safely through another shaft if accident occurs. However, it is also the reason, if mines are linked, flood of one may lead to the flooding of other connected mines (Sokolova, 2019). Several of 39 flooded (and as the result inoperable) coal mines are known for significant storage of hazardous materials (OSCE, 2020). For instance, mine Yunkom in the past served as underground nuclear test facilities and radioactive waste storage (OSCE, 2017).

With the onset of the armed conflict the government of Ukraine lost control and do not receive information from air and water quality monitoring stations located in non-government controlled territories. They represent more than a half of installations in the region (OSCE, 2020). Several actors published data on environmental impact of the conflict in Ukraine, however there is still a lack of comprehensive assessment of environmental risks (Weir & Denisov, 2017).

4.2. Results: Environmental Governance in Donetsk and Luhansk

The following two sub-sections provide syntheses of the key results of the analysis of websites of de-facto authorities of Luhansk People's Republic (4.3.1.) and Donetsk People's Republic (4.3.2.) as explained in the methodology. It is done in a discursing way. For the full analysis presented please refer to the Annex III: Application of the analytical framework to explore environmental governance in Luhansk People's Republic and Annex IV: Application of the analytical framework to explore environmental governance in Luhansk People's Republic.

4.2.1 Environmental Governance in Luhansk People's Republic (Synthesis)

Analysis of the documents suggests the presence of the institutional, policy and legislative framework for environmental management developed by the quasi-state institutions. Stakeholder mapping conducted by examining the de-facto authorities' websites (see Annex II) demonstrates that the Ministry of Natural Resources and Ecological Safety (MNRES) of LRP is the key specialized executive body in the field of environment protection. According to its formal mandate MNRES implements state policy and makes proposals to improve legislation in environmental protection and environmental safety, including, for example, waste, mineral resources, protected areas, water management, and fisheries, forestry, hunting, environmental impact assessment.

Other relevant stakeholders include the Ministry of Emergency Situations, the Ministry of Fuel, Energy and Coal, and the Ministry of Agriculture. The websites of the State Committee for Land Management and the Ministry of Health were examined. However, the search did not yield references to environmental issues.

A mid-term policy was approved by the Order of the Head of LRP. It details priorities for the environmental management sector and plan of actions for 2019-2023 across the following 13 sectors: Legislative base; Economic mechanisms for the financing of environmental management; Multi-stakeholder environmental monitoring system; Air quality (including industrial emissions control; improvement of transport and roads); Protection and use of water resources (including industries regulation, water quality monitoring in accordance with the standards of the Russian Federation); Land management; Conservation (including forests, water bio-resources); Protected areas; Waste management; Mineral resources; Ecological safety; Environmental education, training, and awareness; and International cooperation.

Relations in the field of environmental protection in the LPR are regulated by the Constitution of the Luhansk People's Republic (2014), Law of June 17, 2016 No. 100-II "On the Environmental Protection", as well as land, water, forest legislation of the Luhansk People's Republic, laws of the Luhansk People's Republic on subsoil, on the protection of atmospheric air, on protection and the use of flora and fauna, on public participation, information, environmental education and awareness and other special legislation of the Luhansk People's Republic.

Specific legislation exists across air, water, protected areas, biodiversity conservation, energy and industrial production, ecological, expertise, control and monitoring. Annex III i.a. includes quantitative analysis of the legal framework for environmental protection and demonstrates

intensive normative work of de-facto authorities across multiple environmental sectors. For instance, 22 laws and sub-laws were adopted or issued in the period of 2016-2019 on the regulation of waste, chemicals and contaminated sites (including regulating transboundary movement of waste). Forest management is regulated by 33 sub-laws issued for the period of 2016-2019. In parallel, rehabilitation of forest from the impact of military operations and related forest fires in the period 2014-2015 is considered one of the four priorities for the Ministry in 2020.

The situation is not as straightforward regarding legislation on land use and soil conservation, environmental concerns in agriculture, health, military practices and climate change. Search brought either limited results or while acknowledged cross-cutting and mentioned in various legal acts, no specific legislations or policies were detected for these categories. This is however also not uncommon for contexts and countries without ongoing armed conflicts.

Enhancement of the legislative base across multiple environmental sectors (e.g. ecological monitoring, forest management, air quality, protected areas, fisheries, water quality, fossil resources, subsoil use) is one of the priorities in the mid-term within the Environmental Action Plan mentioned above. The NEP also proposes that the LNR studies the feasibility of adopting international environmental conventions, aiming to enforce international environmental law and improve its international image. The Environmental Action Plan provides for the development of a system to monitor, analyse, identify gaps, evaluate the efficiency and improve the legislative base. In parallel, the action plan also stipulates the improvement of legislation in alignment with the “general” tendency of unification of the legal base of the LPR with the Russian Federation.

The Environmental Action Plan provides for analysis of environmental monitoring systems of bordering countries for interoperability and development of respective proposals for international agreements; development of international cooperation with DPR and the Russian Federation in the field of protected areas; mutual aid agreement for prevention and response to ecological disasters; analysis of the flow of the river Serverskiy Donets and development of compensation claims addressed to Ukraine for environmental damage; cost analysis of damage to forests and water resources as the result of “aggression” of Ukraine as stated in the Environmental Action Plan; analysis of the potential negative impact to other countries from industries within LPR as well as analysis of the negative impact on the environment from bordering countries; development of mitigation measures for preventing and mitigating negative impact.

According to the de-facto authorities, environmental monitoring was resumed in 2015. In parallel, the Environmental Action Plan aims to enhance it and establish the multi-stakeholder environmental monitoring system with the involvement of Ministry of Natural Resources and Ecological Safety, Ministry of Health, Ministry of Energy, State Committee for Land management; laboratories and seismic monitoring network and others.

Multiple reports of environmental monitoring, environmental impact assessment, and reports of implemented activities are presented on the website. For example, the report of the Results of Work of the State Environmental Management for the first half of 2019 notes that 305

inspections (scheduled and unscheduled) were conducted by Ecological Supervision and Environmental Control departments. Based on the results of the inspections, 332 protocols on administrative offenses against environmental law violators were compiled and reviewed, fines were imposed. Penalties were imposed *i.a.* in respect to air pollution, waste management, water resources, hunting, water bioresources, green spaces, concealing environmental information by businesses, failure to provide information during an audit, etc.

Law of June 17, 2016 No. 100-II "On the Environmental Protection" establishes an environmental tax, the mandatory financing by legal entities and individuals - entrepreneurs engaged in economic and (or) other activities that result or may lead to environmental pollution, measures to prevent and (or) reduce the negative impact on the environment, eliminate the consequences of this impact. The Environmental Action Plan also provides for the improvement of the economic mechanisms for the financing of environmental management (e.g. across air quality, solid waste management, industrial waste management, water resources, mineral resources). Development and approval of the mechanism for the financing of environmental management is one of the four priorities of MNRES.

Analysis of the websites also revealed presence of 14 articles on “ecocide” *i.a.* accusing the government of Ukraine in falsifying and concealing environmental information, minimizing the role of waste mismanagement and its impact on the health of the population in LPR and claiming the failure of environmental governance and environmental mismanagement in Ukraine has a spill-over effect on the state of the environment in Donbass.

4.2.2. Environmental Governance in Donetsk People’s Republic (Synthesis)

The State Committee for Environmental Policy and Natural Resources is a specially authorized executive body in environment protection and natural resources management in the DPR and is accountable to the “head of government”. It is mandated to develop and implement environmental policies, protecting the life and health of the population from the negative impact of economic and other activities, implement state control of compliance with environmental legislation by enterprises, inform the population about the state of the environment, etc. Other important state institutions include the Committee of Land Resources, Ministry of Agriculture and Food Policy, Ministry of Coal and Energy, Ministry of Civil Defense, Emergency Situations and Emergency Response, State Committee for Water and Fisheries of the Donetsk People's Republic, State Committee on Forest and Hunting.

According to the information from the websites of the de-facto authorities, the environmental policy framework is under development. Meanwhile, the Policy for Forest Recovery and Regreening for 2018-2023 was developed by the State Committee of Forest and Hunting, Department of Analysis and Strategic Development of the Council of Ministers, Institute of Economic Studies, Donetsk Botanical Garden and State Committee for Land Resources.

The legislation in the field of environmental protection is based on the Constitution of the Donetsk People’s Republic and legislative base, detailed in Annex IV. The Law on Environmental Protection (2015) establishes principles of environmental protection and covers a wide range of environmental aspects e.g. penalties for environmental damage, environmental

insurance, ecological certification, environmental impact assessment, ecological expertise, military facilities, dangerous chemical substances, radioactive substances, use of chemicals in agriculture, protected areas, ecological disasters and ecological emergencies, biodiversity, monitoring, environmental education, public participation, international cooperation, the prohibition of economic and other activities, the consequences of which are unpredictable for the environment, as well as the implementation of projects that can lead to the degradation of natural ecological systems, and so on. For the period of 2015-2020, multiple other laws and sub-laws (orders, resolutions, decrees) were developed in DPR for the protection of the environment, regulating a vast number of sectors. For instance, in the field of forest management 10 orders were issued by the State Committee of Forest and Hunting in the period 2017-2019, 5 resolutions and decrees of the Council of Ministers and the Government and 3 orders of the Head of DPR issued in the period of 2016-2018. Analysis of legislation also revealed the cross-cutting themes of transboundary movement, import, and export across various sectors such as hazardous waste, dangerous chemicals, and wildlife.

In terms of data collection and environmental monitoring, it should be noted that according to the data provided by the de-facto authorities in 2019 167 samples of surface and return waters, soils, emissions of stationary and mobile sources of atmospheric air pollution were selected, 2775 measurements were made. According to their statements based on the analysis of water samples selected in the framework of monitoring, specialists of the State Committee regularly update the map of the state of surface reservoirs of the DPR. In addition, more than 100 interactive maps of air pollution, surface water, and coal industry enterprises have been developed, and more than 80 maps are available in PDF format. An interactive map of protected areas can also be found on the de-facto authorities' website.

Data available on the de-facto authorities' websites suggests that ecological inspections were resumed. According to their statements, 526 inspections of 305 objects were conducted in 2019, including planned, unscheduled and "dawn raids". Information on administrative protocols for the detected violations is provided, including on imposed administrative fines, collected fines, and claims.

The design and building of objects of economic and other activities, the operation of which may lead to adverse changes in the climate and the ozone layer of the atmosphere, is forbidden in the Law on Atmospheric Air Protection (2018). No specific policy and legislation on climate change were identified. The issue of the nexus human health and environment was cross-cutting but no specific policy framework and legislation were detected either. The Law on Environmental Protection (2015) includes considerations for defence assets but no specific policy and legislation was identified on the environmental consequences of armed conflict (incl. military practices).

According to the legislative framework, a mandatory condition for the import and use of pesticides is their state registration: they must be included in the "State catalogue of pesticides and agrochemicals permitted for use in the territory of the Russian Federation", and in the "State register of pesticides and agrochemicals permitted for use in Ukraine".

4.2.3. Cooperation and Joint Initiative of Luhansk People’s Republic and Donetsk People’s Republic

In 2019 an agreement was signed with DPR for cooperation in the fields of protected areas, waste management, forest management, and transboundary water management. Furthermore, in 2017, a joint initiative was launched by the DPR and LPR – the Humanitarian Programme for Reuniting the People of Donbas and Environmental Safety. One of its focus areas is ensuring environmental safety in the Donbas. The initiative envisioned the creation of a joint inspection team to monitor the safety of industrial enterprises. In doing so, the de-facto authorities also requested unhindered access to energy, water and gas facilities located in the government-controlled part of the Donbas. Access was to be granted to environmental and humanitarian organisations of the “republics”, as well as to international organisations recommended by the de-facto authorities, on the pretext that these facilities can create risks for the citizens of the “republics”. The list of environmental hot spots and key areas/fields of concern requiring joint inspection is available on the website.

LPR and DPR jointly held round tables on the Ecocide of Donbass accusing Ukraine of both inflicting environmental damage through military operations and suggesting that part of the environmental issues in Donbass are caused by the impact of weak environmental governance in Ukraine.

Chapter 5: Comparison of Results

The Donbass region is a territorial region where the Ukrainian state lacks the capacity to set and enforce decisions and/or the monopoly over the use of force. It can also be referred as an area of limited statehood. The results of the case study suggest that in eastern Ukraine environmental governance did not collapse as could have been expected according to literature review (ILPI, 2014, cited in Weir et al., 2019) in *low-intensity long term armed conflict*. Evidence suggests that instead, an institutional adaptation is taking place. The analysis of the publicly available information suggests that de-facto authorities in both DPR and LPR have developed and/or are developing institutional, legal and policy frameworks for environmental protection and natural resources management. Each ‘republic’ has established a distinctive institutional set up for environmental protection and natural resource management.

The institutional adaptation in the field of environmental governance in the areas of the Donbas not controlled by the government of Ukraine can be considered from several perspectives. Firstly, it is important for the DNR and LNR to demonstrate that the “republics” are “normal” and legitimate states, with all the necessary bureaucracy and procedures that entails. Hence, they are encouraged to imitate normal state activity, whether or not it has any tangible effect. Secondly, Donbas not only has a long history of pollution, but also of environmental governance. It is reasonable to assume that it has a fair number of environmental professionals who believe in environmental protection, whatever the politics may be, and for many of them their work is also their source of livelihood. In parallel, it is fair to suggest that the findings confirm the themes identified in the literature review associated with *the long-term objectives* of the “de facto” authorities as well as *self-organization of the local communities* to prevent environmental governance from collapse.

Based on the findings of the literature review, it was expected that environmental laws would have been waived (see theme Hindered Law Enforcement). However, both republics demonstrate intensive normative work across multiple environmental sectors. In particular, normative work focuses intensively on the sectors of air, water, protected areas, biodiversity conservation, forest management, waste, chemicals and contaminated sites, energy and industrial production (including mining), management of disaster risks associated with natural and man-made hazards. Reports, publicly available on the website of de-facto authorities, also suggest environmental law enforcement efforts are undertaken. In parallel, the EAP of LPR also calls for the improvement of legislation in alignment with the “general” tendency of unification of the legal base of the LPR with the Russian Federation. A politically motivated process, this mirrors Ukraine, which consistently aligns its legal framework with that of the EU.

For several categories/sectors, the findings are not as straightforward. In particular, climate in both republics is connected to minimizing the technogenic impact on air quality and ozone depletion but it is not approached through a specific policy or legislation. Categories of human health and environment, and the environmental consequences of armed conflict remain cross-cutting, there are references in various legislative acts but no specific policy and legislation has been detected. The sectors of land use and soil conservation, and environmental concerns in agriculture, require further examination as research resulted in limited findings in terms of both policy and legislation. For instance, in terms of environmental concerns in agriculture, the

findings in DPR were related only through the prism of the import and use of pesticides. The subject of soil and land is particularly relevant due to the historically intense mining industry in the region and a vast number of tailings.

While the environment (commonly unlike natural resources), as the literature review identified, can be considered a comparatively unpolitical object of common concern, and thus an entry point for discourse in contested settings, the case study of eastern Ukraine suggests intense politicization of the subject. “Official” statements of de-facto authorities, combined with findings on joint conferences on ecocide, development of compensation claims addressed to Ukraine for environmental damage (EAP of LPR), evidence suggests therefore that environmental protection is high up on the policy and political agenda for both LPR and DPR. For this particular case study, the above suggests contradictory results to the findings of the literature review - *Under-prioritization on the Policy Agenda*. However, the same could potentially confirm the relevance of the factors *Social Trust and Claims of Legitimacy*. It is fair to assume it can contribute to increasing distrust between the local population and the Central Government of Ukraine while supporting legitimacy claims of the de-facto authorities, seeking support of the local population. The approval of the population is an important element in the success of insurgencies. Therefore, environmental peacebuilding should be considered both an indispensable component of the policy agenda in conflict resolution and indispensable peacebuilding tool. It would be consistent with the theme identified in the literature around *Peacebuilding Opportunities* and would confirm the appropriateness of recommendation to include environmental governance as a *Peacebuilding Tool*. However, it will lack the leverage of a comparatively unpolitical object of common concern and with this degree of politicisation it will likely require challenging de-sensitisation efforts. Perhaps it is a sign that environmental protection in eastern Ukraine eminently depends on the political decision between parties. If or when a political resolution is achieved between the conflict parties, science and fact-led environmental management could help facilitate peacebuilding efforts.

Literature review identified *Hindered Data Collection* and *Environmental Monitoring* as common factors for the environmental governance in armed conflicts. Environmental monitoring, data collection and information sharing are commonly hindered during armed conflicts. However, documents available online suggest that environmental monitoring in both breakaway republics has been resumed to a certain degree, and as early as 2015 in the LNR, with ongoing efforts to enhance it. According to the statements of the DNR’s de-facto authorities, measurements of water, soils and emissions of stationary and mobile sources of atmospheric air pollution are being conducted. Assessment of technological capacity and resources for environmental monitoring (e.g. water sampling, air quality control), meanwhile, is beyond the scope of the study.

The de-facto authorities claim that multiple interactive maps of air pollution, surface water, and the coal industry have been developed. The websites of LRP and DPR amongst other include progress reports, a number of interactive maps, information on monitoring the state of the environment, enforcement of legislation and penalties. As the de-facto authorities produce and publish online environmental data, it is fair to assume it can be used by the de-facto authorities to guide and improve governance efforts. Furthermore, information also demonstrates efforts

to use some innovative methods, e.g. interactive maps. However, most of the monitoring data and the maps with a number of exceptions (e.g. interactive map of the DNR's protected areas) could not be consulted online. Therefore, currently there is neither evidence that allows us to fully confirm nor completely disregard their statements.

Analysis of the data available on the de-facto authorities websites suggest that multiple industrial enterprises continue functioning fully or partially during the low-intensity armed conflict in the region in territories under the control of de-facto authorities. According to the written reports ecological monitoring, inspection and ecological expertise of enterprises are assured by the de-facto authorities.

Limitations of International Instruments to Protect the Environment has specific implications for the case study as the majority of international law provisions do not apply to non-international armed conflicts. If acknowledged by the International Criminal Court (ICC) that the conflict in Donbass is international and Russian involvement is proved, Russia for example could have been obliged to ensure that de-facto authorities in Donbass are capable of performing adequate levels of environmental oversight (Power & Weir, 2018). Meanwhile, however, Russia withdrew its signature from the founding statute of ICC and it is reasonable to suggest that it would not acknowledge its jurisdiction.

The literature review suggests disengagement from trans-boundary environmental institutions and multilateral as well as environmental bilateral and multilateral agreements is a common factor contributing to the collapse of environmental governance (Jensen, 2019). Yet the breakaway republics in eastern Ukraine are forging alliances and signing bilateral agreements with each other for environmental cooperation on protected areas, waste management, forest management, and transboundary water management. In parallel, they conduct joint conferences and form a joint initiative Humanitarian and Ecological Safety Program. Analysis of the Environmental Action Plan of LPR proposes that the LPR studies the feasibility of adopting international environmental conventions, aiming to achieve enforcement of international environmental legislation and improve the image of LRP internationally. However, while the LPR could introduce these legal norms, unrecognised self-proclaimed states (or republics) cannot become parties to international conventions. This suggests that it may be motivated by propagandistic intentions.

However, it is also likely that the limitations of the international law in non-international conflicts decrease opportunities (e.g. in case of international organisations) for the protection of the population and environment through engagement with de-facto authorities and NSAG, and inadvertently enables further politicization. Therefore, the findings also confirm the applicability of recommendations for *Improved International Legal Framework and Its Operationalisation* and *Engagement of De-Facto Authorities and NSAG* for environmental governance in eastern Ukraine.

Chapter 6: Discussion

The literature review suggested *Multiple Combinations of Governance Actors* in armed conflicts on top of the de-facto authorities. Therefore, further research is required to establish the role of other potential environmental governance actors in eastern Ukraine, such as local and international non-governmental organisations, international organisations and private enterprises. Understanding of other governance actors, can enable to address theme *Limited External Governance Support*. Understanding of limitations and opportunities of external governance support (e.g. from non-governmental organisations), can lead to identification of existing and potential strategies to maintain environmental governance capacity in armed conflicts. In parallel, understanding of business continuity arrangements of multiple functioning enterprises in eastern Ukraine and the economic feasibility of the industries merits further research. For instance, the findings could present a valuable contribution (in terms of lessons learnt) to the field of business continuity and organizational resilience, strengthening resilience of businesses that find themselves in the midst of an armed conflict. The research on the role of criminal groups (e.g. mafia) could also support development of a comprehensive overview of governance challenges in armed conflicts. Corruption has been a reoccurring issue in Ukraine (Transparency International, 2019).

Addressing the factor *Limited Data on External and Non-State Actors* in the context of Donbass is not straightforward. While the present research did not envisage examining data on external actors, it found vast amounts of information on the de-facto authorities as environmental governance actors, whether it presents part of institutional adaptation or propagandistic efforts. However, further research is suggested to identify whether this information is available to stakeholders in environmental governance in Ukraine as the web-sites of de-facto authorities are blocked for Ukrainian online users and vice versa (Freedom House, 2018). It is important to understand to what degree information sharing takes place or does not take place between environmental professionals in Kiev and Donbass. It is likely that research would confirm the factor *Hindered Information Sharing* identified in the literature review. In that case, it would reaffirm the applicability of recommendation for *Enhanced Information Sharing*.

Both republics have legislation in place regarding participation of citizens in decision-making, free access to reliable information on the state of the environment, information, environmental education and awareness, participation of citizens, public associations and non-profit organizations in solving environmental problems. However, information available on the websites could not lead to the conclusion whether these laws were implemented or served as a facade. Further research on this topic will also support development of conclusions on the applicability of recommendations on the use of *Innovative Methods* such as Citizen Science in this context. Social media analysis could potentially enable us to triangulate information provided by de-facto authorities. However, this research should be informed by or interlinked with analysis of the practice of prosecution and detention for online activities in the region.

Environmental activities are funded from the budgets of the de-facto authorities according to the legislative frameworks. Furthermore, LPR imposes an environmental tax and regards improvement of the economic mechanisms for the financing of environmental management (e.g. across air quality, solid waste management, industrial waste management, water resources,

mineral resources) as one of the four priorities of the Ministry of Natural Resources and Environmental Safety. However, the websites of the de-facto authorities do not provide information on how the budget for environmental protection was affected by the conflict. Therefore, at this stage research cannot neither confirm nor discard theme *Cut Funding*. Similarly, information made publicly available by the de-facto authorities does not enable to make conclusion on the extent Human and Technical Resources were impacted by the armed conflict. Multiple adverts of training programs for environmental professionals are available on the websites of de-facto environmental authorities. Further research is suggested examining the impact of the armed conflict on Human, Technical and Financial Resources for environmental governance.

On the surface, the insignificant fact that the legislation of DPR allows the import and the use of pesticides in both "State catalogue of pesticides and agrochemicals permitted for use in the territory of the Russian Federation", and the "State register of pesticides and agrochemicals permitted for use in Ukraine" provides an additional detail to consider. It could suggest that at this stage agriculture and livelihoods could serve as potentially more accessible entry point for dialogue, cooperation and building social trust of the population for the Ukrainian Government, rather than environment due to its high politicization.

To address a number of gaps identified above, it is suggested to conduct semi-structural interviews. Furthermore, social media analysis could enable further triangulation of information. Comparing findings of the case study with the official information provided by the Ukrainian Government, strategic documents of intergovernmental organisations (e.g. Humanitarian Response Plan for eastern Ukraine) and reports of non-governmental organisations could serve to be the next steps in the research to provide a comprehensive overview of environmental governance in east Ukraine.

Chapter 7: Conclusions

The review of academic and grey literature to answer R1 shows multiple factors associated with the impact of armed conflicts on environmental governance, e.g. lack of prioritisation of environment on the policy agenda, hindered data collection, environmental monitoring and information sharing, limitations of international instruments to protect the environment and limited external support to sustain governance capacity. The case study illustrates the presence of some factors in eastern Ukraine, consistent with the findings of the literature review. For example, the limitations of international law have practical implications for environmental governance in eastern Ukraine. However, the case study also highlights results which contradict the reviewed literature, e.g. ongoing institutional adaptation; significant importance is allocated to environmental protection on the policy agenda by the de-facto authorities. The findings of the case study suggest that either at present the knowledge in the field of environmental governance does not fully reflect the complexity of modern armed conflicts or that it is a more complex situation than generalized studies suggest because it is invariably context specific. The case study both complements the knowledge identified in the literature review in respect to R1 and answers R3.

Political dimension is inevitable in the context of eastern Ukraine. The intense politicisation of the environment in the Donbas could be a sign of a trend in contemporary warfare, where environmental information is increasingly becoming weaponised. It is fair to suggest environmental governance could be partially instrumentalised in the context of Donbass. But it is also important to consider the specific context. Relevant factors include the high concentration of technological hazards and the grievances of the local population associated with a long history of environmental decline. The lack of neutrality of the sources and politicization, rather than limitation, was acknowledged as an intrinsic part of the context – and the subject of the study.

The results of the case study are consistent with some findings of the literature review regarding common challenges to investigating environmental governance in armed conflicts, e.g. political contestation (see R2). In parallel, however, the case study also illustrates potential overstatement of the unavailability of environmental data, and data on non-state actors, in armed conflicts. Yet, it is not clear to what extent information sharing is taking place between environmental professionals across the combat line and to what degree information available on the websites of de-facto authorities is consulted by environmental professionals in Kiev as their websites are blocked for the Ukrainian online users.

Environmental governance in armed conflicts, while facing several challenges also provides us with peacebuilding opportunities. Generic recommendations for improving environmental governance in armed conflict (see R4) could apply to the context of eastern Ukraine. However, a number of factors (e.g. the role of non-governmental organisations) in environmental governance in eastern Ukraine requires further investigation through mixed method approach to form recommendations (e.g. regarding external support, strategies to support environmental governance) and policy approaches to protect the population and the environment in eastern Ukraine.

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ANNEX I: CONCEPTS AND DEFINITIONS

The *Legality of the Threat or Use of Nuclear Weapons* Advisory Opinion of the International Court of Justice ('ICJ') suggests 'the environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn' (Bedjaoui et al., 1996, para. 29). However, there is no commonly agreed definition of "environment". Furthermore, precise definitions of "environment" are considered to some degree controversial as they are encompassing wide range of elements, including different media (water, soil, air), ecosystem dynamics, private property and cultural elements (Payne, 2017). A United Nations Environment Programme (UNEP) Expert Group suggests the following definition: "environment" includes abiotic and biotic components, including air, water, soil, flora, fauna and the ecosystem formed by their interaction' and might even include 'cultural heritage, features of the landscape and environmental amenity', but it excluded private property (Payne, 2017). Meanwhile, Mollard-Bennelier (2001, cited in Payne, 2017) suggests that precise definitions of "environment" can be unhelpful, difficult and even dangerous.

It is essential to differentiate between the "**government**" and "**governance**" (Kelman, 2015; Peters & Pierre, 1998). Governments as public institutions have the authority to make binding decisions, enforce their implementation and ensure allocation of values through administration, politics and policy (Kettl, 2002, cited in Jensen, 2008). In contrast, the term "governance" emerged during the early 1990s in intentional opposition to conventional "government" (Fukuyama, 2015). Governance entails a complex web of actors (Forino et al, 2018). It embraces a wider spectrum of actors, organizations and institutions of both a public and non-public character, which are "involved in structuring politics and their relationships, whether within sovereign nation-states or without" (Ladeur, 2004, cited in Jensen, 2008, p. 381). Risse (2012, p.2) defined governance as "various institutionalized modes of social coordination to produce and implement collectively binding rules, or to provide collective goods". Governance can be both hierarchical (rule-making) and non-hierarchical (e.g. through negotiation)" (Krasner 1999: 4, cited in Risse, 2012). It is exercised at multiple levels, e.g. municipality, region, nation, globe, and incorporates customary and statutory laws, institutions as well as practices (Bruch, 2019).

While there are currently no globally agreed definition of "**environmental governance**", several alternatives are worth consideration. UNEP (2009, p.2) notes "Environmental Governance comprises the rules, practices, policies and institutions that shape how humans interact with the environment". According to Lemos & Agrawal (2006, p. 71) environmental governance can be synonymous to "institutionalised power to shape environmental processes and outcomes". It represents the "set of regulatory processes, mechanisms and organizations through which political actors influence environmental actions and outcomes" (Lemos & Agrawal, 2009, p. 298). Environmental governance includes broadly all institutional solutions for resolving conflicts over environmental resources (Paavola 2007, cited in Armitage et al, 2012). Meanwhile, Biermann *et al* (2009, p. 3, cited in Armitage et al, 2012) suggests that environmental governance concerns "[t]he interrelated and increasingly integrated system of formal and informal rules, rule-making systems, and actor-networks at all levels of human society (from local to global) that are set up to steer societies toward preventing, mitigating, and adapting to global and local environmental change and, in particular, earth system transformation, within the normative context of sustainable development"

The discussion related to "**institutional failure/collapse**" focuses "on the structures, particularly on the government apparatus [...], discussing the inability of the institutional system to deliver" (Derwort, Jager & Newig, 2019). However, the globally agreed definition is

lacking as well. Special Rapporteur of the International Law Commission in the first report “Protection of the Environment in Relation to Armed Conflicts” highlights that institutional collapse is considered to be a common feature of conflict situations (ILC, 2018).

“*Areas of limited statehood*” (ALS). ALS can be defined as “territorial regions or policy fields, where the state lacks the capacity to set and enforce decisions and/or the monopoly over the use of force” (Risse 2011, p. 4–5, cited in Schmelzle & Stollenwerk, 2018), which consolidated states possess (Risse, 2012). Insecurity or violent conflicts are common for ALS (Stollenwerk, 2018).

“Non-state actors” hold an important role in environmental management. While a globally established definition of a “*non-state actor*” is missing, the present research employs working definition used by the International Law Association. It encompasses *i.a.* organized non-state military/armed groups (NSAGs), private military companies and private groups including multinational enterprises. It excludes intergovernmental organizations, illegal and illegitimate groups (e.g. mafia) and unorganized illegal groups (UNGA, 2019).

The International Humanitarian Law, also known as the Law of Armed Conflicts, distinguishes two types of armed conflicts: “*International Armed Conflict*” and “*Non-International Armed Conflict*”. Identification of armed conflicts is important as it determines when International Humanitarian Law applies instead of national criminal law. International Humanitarian Law limits the methods and means of warfare, and aims to protect people who are not, or no longer, taking part in armed hostilities.

In an international armed conflict a resort to hostile armed forces between two or more states is observed. In non-international armed conflict, armed confrontation is taking place between governmental forces and non-state armed groups, or between such groups only (ICRC, 2008). The threshold of classification of armed hostilities into non-state armed conflict is higher than in international armed conflict. Non-international armed conflicts to be classified as such need to exhibit two characteristics:

- 1) conflicting parties exhibit a certain degree of organization;
- 2) there is a certain intensity of the armed violence.

Situations of internal disturbances and tensions e.g. riots are not considered armed conflicts (UNODC, n/d).

The adequacy of the binary legal framework distinguishing only international armed conflict and non-international armed conflict is increasingly questioned. Armed conflicts have become more complex, reflecting neither traditional concept of international armed conflict or non-international armed conflict. Many conflicts include international element and there is an increasing discourse on the “internationalization of armed conflicts” (Geneva Academy, 2017).

In international relations, there is also a notion of “*frozen conflict*”. It is an armed conflict in stasis where military operations are halted but the underlying causes of the conflict still exist without a permanent peace treaty or agreed upon political framework towards reconciliation (Pohl, 2016). As the result the situation evolves into a unresolved protracted conflict with a looming threat of violence renewal, e.g. Transnistria, South Ossetia and Abkhazia, Nagorno-Karabakh, Kashmir, Cyprus, Korea.

ANNEX II: EXAMINED WEBSITES OF DE-FACTO AUTHORITIES

<i>Luhansk People's Republic</i>	
Government	https://sovminlnr.ru
Ministry of Natural Resources and Ecological Safety	https://www.mprlnr.su
Ministry of Fuel, Energy and Coal	https://mintop.su
Ministry of Emergency Situations	https://mchs-lnr.su/
Ministry of Health	https://mzlnr.su
Ministry of Agriculture	https://mshiplnr.su
State Committee for Land Management	https://goskomzemplnr.wixsite.com/gkzlnr
<i>Donetsk People's Republic</i>	
Government	https://pravdnr.ru
State Committee for Environmental Policy and Natural Resources	http://gkecopoldnr.ru
State Committee on Forest and Hunting	http://dnrles.ru
Ministry of Civil Defence, Emergency Situations and Emergency Response	http://dnmchs.ru
State Committee of Water and Fisheries	https://gkvrh.ugletele.com
Committee of Land Resources	https://goskomzemdnr.ru/
Ministry of Agriculture and Food Policy	https://mcxdnr.ru/
Ministry of Coal and Energy	https://mintek-dnr.ru/
Ministry of Health	http://mzdnr.ru
Main Department of Geology and Geoecology	http://glavgeodpr.ru
<i>Joint Initiative of Luhansk People's Republic and Donetsk People's Republic</i>	
Humanitarian Program for Reuniting the People of Donbass	http://gum-centr.su

ANNEX III: APPLICATION OF THE ANALYTICAL FRAMEWORK TO EXPLORE ENVIRONMENTAL GOVERNANCE IN LUHANSK PEOPLE'S REPUBLIC

Institutional Framework	<p>Ministry of Natural Resources and Ecological Safety (MNRES) of LPR - specially authorized executive body in the field of environment protection and carries out public administration. MNRES implements state policy and carries out the functions of normative legal regulation, makes proposals to improve legislation in the field of environmental protection and environmental safety, including for example waste (except radioactive waste), mineral resources, protected areas, water management and water and fish resources, fisheries, forestry, hunting, environmental impact assessment, crime and administrative offenses within the competence of the Ministry.</p> <p>Other relevant institutions: Ministry of Emergency Services; Ministry of Agriculture; Ministry of Health.</p>
Policy Framework	<p>Action Plan for the Implementation of the Concept of State Policy in the field of Environmental Safety and Environmental Management of LRP (2019-2023), approved by the Order of the Head of the Luhansk People's Republic on 1 November 2019.</p> <p>Section 1: Legislative base; Section 2: Economic mechanisms for the financing of environmental management. Section 3: Multi-stakeholder environmental monitoring system; Section 4: Air quality (including industrial emissions control; improvement of transport and roads). Section 5: Protection and Use of Water Resources (including industries regulation, water quality monitoring in accordance with the standards of the Russian Federation). Section 6: Land Management. Section 7: Conservation (including forests, water bio-resources). Section 8: Protected Areas. Section 9: Waste Management. Section 10: Mineral Resources. Section 11: Ecological Safety. Section 12: Environmental education, training and awareness. Section 13: International Cooperation:</p>
Legal Framework	<p>Relations in the field of environmental protection in the Luhansk People's Republic are regulated by the Constitution of the Luhansk People's Republic, Law of June 17, 2016 No. 100-II "On the Environmental Protection", as well as land, water, forest legislation of the Luhansk People's Republic, laws of the Luhansk People's Republic on subsoil, on the protection of atmospheric air, on protection and the use of flora and fauna and other special legislation of the Luhansk People's Republic.</p> <p>Environmental protection is referenced in Articles 29, 35 and 51 of the Constitution of the Luhansk's People's Republic. Article 29 (par. 2) states that the possession, use and disposal of land and other natural resources should not harm the environment and violate the rights and legitimate interests of others. Article 35</p>

highlights the right of every individual on the territory of the republic to a favourable environment, reliable information about its condition and to compensation for damage caused to his/her health or property by an environmental offense. Article 51 notes that everyone is obliged to protect nature and the environment, treat with care natural resources (Constitution of the Luhansk's People Republic, 2014).

Law of June 17, 2016 No. 100-II "On the Environmental Protection" highlights the human rights based approach to environmental protection, identifies principles of environmental protection including the issues of responsibility of state authorities for ensuring a favourable environment and environmental safety in the respective territories, , the prohibition of economic and other activities, the consequences of which are unpredictable for the environment, as well as the implementation of projects that can lead to the degradation of natural ecological systems, change and (or) destruction of the genetic fund of plants, animals and other organisms, depletion of natural resources and other negative environmental changes; the presumption of environmental hazard of the planned economic and other activities the priority of conservation of natural ecological systems, natural landscapes and natural complexes; biodiversity conservation.

Enhancement of legislative base across multiple environmental sectors (e.g. ecological monitoring, forest management, air quality, protected areas, fisheries, water quality, fossil resources, subsoil use) is one of the key areas within the environmental action plan. Furthermore, it tasks Ministry to develop feasibility analysis regarding adoption of international environmental conventions. It aims to achieve enforcement of international environmental legislation and improve the image of LRP internationally The action plan provides for the development of a monitoring system, for analysis, identification of gaps, evaluation of efficiency and improvement of legislative base. In parallel, the action plan also notes the improvement of legislation in alignment with the general tendency of unification of the legal base of the LPR with the Russian Federation.

Air

5 orders were issued by the Ministry of Natural Resources and Ecological Safety in the period of 2016-2019;
guidelines available for completing the annex to the special permission for atmospheric emissions by stationary sources;
calculation examples of polluting substances from the separate type of equipment (gas boilers, gas plates for preparing food)

Water

Water Code adopted in 2020;
11 orders for water use for the period of 2015-2019;
additional guidelines and annexes available e.g. annexes to orders, water resources catalogues, list of water reservoirs and their characteristics, administrative application forms;
2 orders for special water use in the period of 2019;
12 orders on water bio-resources management, e.g. seasonal prohibition of fishing;
14 documents including annexes to orders, water resources catalogues, list of water reservoirs, their characteristics,

	<p>administrative application forms e.g. request for water level reduction.</p> <p>MNRES provides monitoring of the quality of surface water</p>
Protected Areas	<ul style="list-style-type: none"> • 7 orders issued in the period 2015-2018.
Biodiversity Conservation	<ul style="list-style-type: none"> • 2 sub-laws (order and resolution) issued in 2017; • “Red Book” (Red List of Endangered Species).
Forest Management	<ul style="list-style-type: none"> • 33 sub-laws issues for the period of 2016-2019. • Enhancement of forest management is one of the four priority areas for 2020
Waste, Chemicals and Contaminated Sites	<ul style="list-style-type: none"> • 22 laws and sub-laws (including regulating transboundary movement of waste) adopted and issued in the period of 2016-2019. • Increasing recycling and management of e-waste, medical and biological waste, waste containing petroleum, packaging plastic waste is one of the four priorities of the Ministry for 2020.
Human Health and Environment	<ul style="list-style-type: none"> • Cross-cutting topic, no specific legislation
Climate	<ul style="list-style-type: none"> • No specific legislation or policies but connected to minimizing the technogenic impact on the air quality, incl: planned reduction of specific pollutant emissions effective operation and reconstruction of installations for capturing and neutralizing pollutants from waste gases; development and implementation of plans for the introduction of resource-saving technologies, improving energy efficiency; • development of alternative energy – wind farms, solar power plants; continued construction of highways bypassing cities, extensive use of urban electric transport; greening of settlements, increasing the area of forests.
Energy and Industrial Production (including mining)	<ul style="list-style-type: none"> • Law on Mining (2016) and Law on Soil and Subsoil Use • 90 orders/governmental decrees in the period 2015- 2020 • 50 ministerial orders in the period of 2016-2020
Land Use and Soil Conservation (including mineral resources & fossils)	<ul style="list-style-type: none"> • 1 order for sub-soil use issued in 2016 by Ministry of Natural Resources and Ecological Safety of LPR - also referenced in Energy and Industrial Production

Environmental Agriculture	Concerns	in	<p>Limited information. Many agricultural organizations, being on the verge of survival for years, resort to the cheapest method of clearing hay field sand pastures or waste disposal-burning. The lack of educational work in the field of fire safety and the general decline of education led to the revival of old misconceptions that burning promotes better grass growth. It is considered an administrative offense. Reports of fines available.</p>
Management of disaster risk associated with natural and man-made hazards			<ul style="list-style-type: none"> • Code of Civil Protection (2018); • 25 laws across sectors in the period of 2014-2018; • 5 orders of the Head of LPR in the period of 2015-2019; • 89 resolutions of the Council of Ministers in the period of 2015-2019; • 54 ministerial orders in the period of 2015-2020; • Article 51 of the Law on Environmental Protection provides regulations regarding “zones of environmental emergencies”. A separate locality of the Luhansk People’s Republic is declared a zone of environmental emergency by the Head of the LRP on the proposal of the Council of Ministers of the Luhansk People’s Republic.
Environmental consequences of armed conflict (incl. military practices)			<ul style="list-style-type: none"> • The requirements articulated in the legislation for the environmental safety also apply to the military and defence facilities. • Rehabilitation of forest from impact of military operations and related forest fires in the period 2014-2015 is one of the four priorities for the Ministry in 2020.
Data Collection			<ul style="list-style-type: none"> • Information on the results of the state environmental examination conducted by the ministry of natural resources and environmental safety of the LRP in the IV quarter of 2016 published in 2017
Monitoring, compliance and enforcement mechanisms (incl. due diligence, corporate responsibility, judiciary and litigation)			<ul style="list-style-type: none"> • Law of June 17, 2016 No. 100-II "On the Environmental Protection" provides for litigation procedures against public authorities of LRP, enterprises, institutions, organizations and citizens in regards to compensation for harm caused to health and property as a result of negative impact on the environment; appeals in a judicial proceeding; actions or inaction of the executive bodies of LRP, local authorities and their officials in regards to violation of environmental rights of citizens, etc. It establishes the independence of the environmental state supervision and inspections and the mandatory environmental impact assessments. It establishes responsibilities for violation of legislation; the permissibility of the impact of economic and other activities on environment

based on requirements in the field of environmental protection.

- Environmental Monitoring: Resolution of the Council of Ministers no. 48 "On Approval of the Regulation on the Environmental Monitoring System" adopted in 2016.
- According to the authorities environmental monitoring was resumed in 2015.
- Ecological control: 17 sub-laws (orders and resolutions) for the period of 2015-2019 ;
- Ecological expertise: 8 laws and sub-laws (orders) for the period of 2016-2019
- Multiple reports of environmental monitoring, ecological expertise and reports of implemented activities are presented. For example, the report of the Results of Work of the State Environmental Management for the first half of 2019 notes that 305 inspections were conducted by Ecological Supervision and Environmental Control departments (including 144 scheduled inspections and 161 unscheduled inspections). Based on the results of the inspections, 332 protocols on administrative offenses against environmental law violators were compiled and reviewed, fines were imposed. Inter alia penalties were imposed for air pollution, waste management at economic entities, water resources, hunting, water bio resources, green spaces, concealing environmental information by businesses, failure to provide information during audit, etc.
- Environmental Action Plan provides for the establishment of environmental monitoring system with the involvement of a multitude of stakeholders, e.g. Ministry of Natural Resources and Ecological Safety, Ministry of Health, Ministry of Energy, State Committee for Land management; laboratories and seismic monitoring network.

International Agreements
and Cooperation

International cooperation is recognized as one of the principles of environmental protection.

- Section 13 of the Environmental Action Plan provides for: analysis of environmental monitoring systems of bordering countries for ensuring interoperability/compatibility and development of respective proposals for international agreements; development of international cooperation with DPR and the Russian Federation in the field of protected areas; mutual aid agreement for prevention and response to ecological disasters; analysis of the flow of the river Serverskiy Donec and development of official complains to Ukraine; cost analysis of damage to forests and water resources as the result of aggression of Ukraine; analysis of
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	<p>potential negative impact to other countries from industries within LPR as well as analysis of negative impact on environment from bordering countries; development of mitigation measures for preventing and mitigating impact.</p> <ul style="list-style-type: none"> • In 2019 an agreement has been signed with DPR for cooperation in the field of protected areas, waste management, forest management and transboundary water management. • Humanitarian Program for reuniting the people of Donbass is a joint initiative launched in 2017 by the Heads of DPR and LPR. It aims to support civilian population living in the areas of Donbass under the control of Ukraine by developing and strengthening cultural, humanitarian and professional ties, providing social and administrative services, and ensuring environmental safety of Donbass. For environmental safety the program envisions: creation of a joint inspection with the participation of representatives of the Ministry of Emergency Situations of the DPR, public and international organizations; monitoring the safety of enterprises located on the territory of Donbass (and the necessary infrastructure for them) by conducting joint inspections; unhindered and safe access to the territory of the Donetsk region of environmental and humanitarian organizations of the DPR, as well as international organizations recommended by the DPR. The envisaged result includes restoration, retrofitting and preservation of: buildings located on the territory of the Donetsk region of enterprises (including Avdeevsky coking chemical plant, Azovstal, Konstantinovskiy state chemical plant, Dzerzhinsk phenol plant), the shut down or damage of which may pose a threat to the population and lead to man-made emergencies; objects of engineering infrastructure (energy, water and gas supply), the closure of which may pose a threat to the life of the population and lead to a humanitarian disaster. It also includes preparation and implementation of proposals to prevent and reduce the current negative impact on the environment.
<p>Public Participation, Information, Education and Awareness</p>	<ul style="list-style-type: none"> • Legislation provides for free access to reliable information on the state of environment, participation of citizens in decision-making regarding their rights to a favourable environment, participation of citizens, public associations and non-profit organizations in solving environmental problems; mandatory participation in environmental protection activities of state authorities of the Luhansk People's Republic, local governments of the Luhansk People's Republic, public associations and non-profit organizations, legal entities and individuals; environmental education
<p>Funding and Expenditure</p>	<ul style="list-style-type: none"> • Law of June 17, 2016 No. 100-II "On the Environmental Protection" establishes an environmental tax, the mandatory financing by legal entities and individuals - entrepreneurs engaged in economic and (or) other activities that result or

may lead to environmental pollution, measures to prevent and (or) reduce the negative impact on the environment, eliminate the consequences of this impact.

- Section 2 of the Environmental Action Plan provides for the improvement of the economic mechanisms for the financing of environmental management (e.g. across air quality, solid waste management, industrial waste management, water resources, mineral resources). Development and approval of the mechanism for the financing of environmental management is one of the four priorities of the Ministry of Natural Resources and Environmental Safety.

Other:

- Further examination of the website, of the Ministry of Natural Resources and Ecological Safety revealed presence of discourse on “ecocide”. Ecocide is “[t]he extensive damage to, destruction of or loss of ecosystems of a given territory, whether by human agency or by other causes, to such an extent that peaceful enjoyment by the inhabitants of that territory has been severely diminished” (cited in *Earth Community Trust, 2012*);
 - 14 articles on ecocide were identified through word “ecocide” and hits were produced in the database. 13 articles were relevant to Donbass and Ukraine in general, while 1 article described the environmental damage to the environment during the war in Vietnam. One of the scientific articles also accuses the government of Ukraine in falsifying and concealing environmental information, minimizing the role of waste mismanagement and thus impact on the health of population on the territory of Luhansk People Republic;
 - 7 scientific articles are available on the website on the topic of environmental management in LRP (including the impact of the armed conflict on the environment and health).
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ANNEX IV: APPLICATION OF THE ANALYTICAL FRAMEWORK TO EXPLORE ENVIRONMENTAL GOVERNANCE IN DONETSK PEOPLE’S REPUBLIC

Institutional Framework	<ul style="list-style-type: none">• The State Committee for Environmental Policy and Natural Resources under the Head of the Donetsk People’s Republic is a specially authorized executive body of the Donetsk People’s Republic, which develops and implements environmental policies aimed at the efficient use and reproduction of natural resources, environmental protection and environmental safety, protecting the life and health of the population from the negative impact of economic and other activities, carries out public administration, implements state control of compliance with environmental legislation by enterprises, institutions and organizations, regardless of ownership and departmental affiliation, by individuals, foreigners and stateless persons in its territory. It is also tasked with raising environmental awareness and informing the population through the media about the ecological state of the environment in the territory of the DPR.• Other important state institutions include: Committee of Land Resources of the DPR. Ministry of Agriculture and Food policy, Ministry of Coal and Energy, Ministry of Civil Defence, Emergency Situations and Emergency Response, State Committee for Water and Fisheries of the Donetsk People's Republic, State Committee on Forest and Hunting.
Policy Framework	<ul style="list-style-type: none">• Policy: According to the news tab of the State Committee on Land Resources of DPR a draft document "Fundamentals of the state environmental policy of the Donetsk People's Republic until 2030" was developed in December 2017 and public discussions were planned for 2018. However, it was impossible to locate the document neither on the official websites of the Head of DPR and State Committee for Environmental Policy and Natural Resources neither through search engine www.yandex.ru.• The State Committee on Land Resources of DPR according to the information available on the official website is developing a set of practical measures within the framework of the national program "Environmental Protection and rational use of natural resources on the territory of the Donetsk People's Republic for 2020-2024”• Meanwhile, the Policy for Forest Recovery and Regreening for 2018-2023 was developed by the State Committee of Forest and Hunting, Department of Analysis and Strategic development of the Council of Ministers, Institute of Economic Studies, Donetsk Botanical Garden and State Committee for Land Resources.
Legal Framework	<ul style="list-style-type: none">• The legislation in the field of environmental protection is based on the Constitution of the Donetsk People’s Republic and consists of this Law, other laws, as well as other regulatory legal acts of the

	<p>Donetsk People’s Republic adopted in accordance with them. (article 2, par 1).</p> <ul style="list-style-type: none"> • For the period of 2015-2020, multiple laws and sub-laws (orders, resolutions, decrees) have been developed in DPR for the protection of the environment, regulating a vast number of issues. • The Law on Environmental Protection(2015) establishes principles of environmental protection, covers a wide range of environmental aspects from the penalties for environmental damage, environmental insurance, ecological certification, environmental impact assessment, ecological expertise, environmental requirements during construction, military facilities, dangerous chemical substances, radioactive substances, use of chemicals in agriculture, protected areas, ozone, ecological disasters and ecological emergencies, biodiversity, priority of conservation of natural ecological systems; state monitoring, state supervision, environmental education, participation of citizens, public organizations and associations in solving environmental problems, mandatory participation in environmental protection activities of state authorities of the Donetsk People’s Republic, local governments, public organizations and associations, legal and physical persons; compensation of environmental harm, right to receive reliable information, international cooperation, the prohibition of economic and other activities, the consequences of which are unpredictable for the environment, as well as the implementation of projects that can lead to the degradation of natural ecological systems, change and (or) destruction of the genetic fund of plants, animals and other organisms, depletion of natural resources and other negative environmental changes; mandatory financing by business entities carrying out activities that lead or may lead to environmental pollution, measures to prevent and (or) reduce negative environmental impacts, eliminate the consequences of this impact, in the manner prescribed by the design and other documentation of the business entity, and so on.
Air	<ul style="list-style-type: none"> • 10 laws and sub-laws (including regulation of ozone depleting substances) adopted in the period of 2017-2019
Water	<ul style="list-style-type: none"> • Draft Water Code of DNR • 19 orders of the Government issued in the period of 2017-2019 • 23 resolutions of the Government issued in the period of 2015-2019 • 48 orders of the State Committee for Water and Fisheries issued in the period of 2017-2020 • 1 decree on Special Water Use issued in 2018 • 2 laws adopted in the period of 2015-2018 on water bio-resources and fishing • List of water resources
Protected Areas	<ul style="list-style-type: none"> • Law on protected areas adopted in 2015; • Resolution of the Government on cadastre of protected areas issued in 2019; • Decree of the Council of Ministers on the protection areas;

Biodiversity Conservation	<ul style="list-style-type: none"> • Interactive map of protected areas • Law on animal life (including biodiversity conservation) adopted in 2017; • Law on Plant Protection adopted in 2019; • Resolution of the government approving requirements for preventing the death of wild animals during production processes, as well as during the operation of transport routes, pipelines, communication lines and power transmission lines, issued in 2019. • Resolution of the Council of Ministers on the Red Book (list of endangered species); • Resolution of the Council of Ministers on legal regulation of cross-border movement of wild living animals, individual wild plants, wild medicinal raw materials , rare and endangered species of wild animals and wild plants, their parts and (or) derivatives.
Forest Management	<ul style="list-style-type: none"> • 10 orders issued by the State Committee of Forest and Hunting in the period 2017-2019; • 5 resolutions and decrees of the Council of Ministers and the Government; • 3 orders of the Head of DPR issued in the period of 2016-2018.
Waste, Chemicals and Contaminated Sites	<ul style="list-style-type: none"> • Law on Waste Management; • 12 resolutions and decrees of the Council of Ministers and the Government • 8 orders of the State Committee for Environmental Policy and Natural Resources
Human Health and Environment	<ul style="list-style-type: none"> • Cross-cutting across different legislative acts • No specific policy or legislation
Climate	<ul style="list-style-type: none"> • Law on Atmospheric Air Protection (2018) forbids to design and build objects of economic and other activities, the operation of which may lead to adverse changes in the climate and the ozone layer of the atmosphere, the deterioration of human health, the destruction of the genetic fund of plants and animals, the occurrence of irreversible consequences for people and the environment. • No specific policy and legislation.
Energy and Industrial Production (including mining)	<ul style="list-style-type: none"> • Mining Law (2015); • Law "On licensing of certain types of economic activities" (2015); • Multiple legal acts on licensing, ecological control etc.
Land Use and Soil Conservation (including mineral resources & fossils)	<ul style="list-style-type: none"> • Sub-soil Law (2015); • Governmental decree "Law on fossil animals' bones and mineralogy and palaeontology" , (2019) •

Environmental Concerns in Agriculture	in	<ul style="list-style-type: none"> • Information is limited; • The import and use of pesticides are governed by the Law of Ukraine "On pesticides and agrochemicals" (g in accordance with the laws of DPR from 10.01.2015 No. 9-1 from 02.06.2014 № 1-1), the Council of Ministers of the DNI 16.10.2015 No. 19-8 and GSP 8.8.1.2.001-98 "Transportation, storage and application of pesticides in the national economy". A mandatory condition for the import and use of pesticides is their state registration: they must be included in the "State catalogue of pesticides and agrochemicals permitted for use in the territory of the Russian Federation", and in the "State register of pesticides and agrochemicals permitted for use in Ukraine". For violation of the rules for the use , storage, transportation, neutralization, elimination and disposal of pesticides and agrochemicals, toxic chemicals and other drugs, administrative responsibility will occur. In some cases, criminal liability may also occur.
Management of disaster risk associated with natural and man-made hazards	of	<ul style="list-style-type: none"> • 7 laws (including law on hydrometeorological activities) adopted in the period of 2015-2018; • 14 decrees and orders issued by the Head of DPR in the period of 2014-2019; • 99 resolutions (sub-laws) of the government were adopted in the period of 2014-2020; • 99 ministerial orders were issued in the period of 2015-2019; • Schedule/Plan of inspection of economic entities that hold licenses to provide services and perform works for fire-prevention purposes.
Environmental consequences of armed conflict (incl. military practices)	of	<ul style="list-style-type: none"> • The current Forest Strategy i.a. provides for replanting of forests including of territories burned in the military operations. Ministry of Emergency Services conducts de-mining of area for the forest planting.
Data Collection		<ul style="list-style-type: none"> • In 2019, 167 samples of surface and return waters, soils, emissions of stationary and mobile sources of atmospheric air pollution were selected, 2775 measurements were made according to the certification area. • Based on the analysis of water samples selected in the framework of monitoring, specialists of the State Committee regularly update the map of the state of surface reservoirs of the DPR. In addition, more than 100 interactive maps of air pollution , surface water and coal industry enterprises have been developed , and more than 80 maps are available in PDF format .
Monitoring, compliance and enforcement mechanisms (incl. due diligence, corporate responsibility, judiciary and litigation)	and	<ul style="list-style-type: none"> • Law on Licensing of 2015 amended in 2017; • 8 Resolutions of the Council of Ministers on Licensing in 2016-2019; • 4 Orders of the State Committee for Environmental Policy and Natural Resources on licensing 2017-2019; • Order of the Ministry of Finance on licensing in 2017; • 3 Orders of the State Committee for Environmental Policy and Natural Resources on ecological expertise in the period of 2017-2019;

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- Resolution of the Council of Ministers of 2017 “on approval of the list of activities and objects of increased environmental danger”;
 - 2 Resolutions of the Council of the Ministers on ecological control in 2017
 - 3 Orders of the State Committee for Environmental Policy and Natural Resources on Ecological monitoring (2017-2019)
 - In 2019: 526 inspections of 305 objects, including planned, unscheduled and “dawn raids”. In 2018-445 inspections and 291 objects).
 - 296 administrative protocols were drawn up for the detected violations (in 2018-217 protocols). The amount of administrative fines imposed amounted to 397 thousand rubbles, collected-387 thousand rubbles. 15 claims were made for the amount of 66 thousand rubbles, of which 49 thousand rubbles were voluntarily recognized and paid.

International
Agreements
Cooperation

and

- Memorandum of cooperation in the field of environmental protection and three agreements between environmental authorities in DPR and LPR were signed in the field of environmental protection and rational use of transboundary water bodies, waste, protected areas;
 - Analysis of legislation also revealed the cross-cutting themes of transboundary movement, import and export. “Transboundary” was identified in the heading of 5 legal acts across various sectors from movement of hazardous waste, dangerous chemicals and wildlife;
 - Humanitarian Program for reuniting the people of Donbass is a joint initiative launched in 2017 by the Heads of DPR and LPR. It aims to support civilian population living in the areas of Donbass under the control of Ukraine by developing and strengthening cultural, humanitarian and professional ties, providing social and administrative services, and ensuring environmental safety of Donbass. For environmental safety the program envisions: creation of a joint inspection with the participation of representatives of the Ministry of Emergency Situations of the DPR, public and international organizations; monitoring the safety of enterprises located on the territory of Donbass (and the necessary infrastructure for them) by conducting joint inspections; unhindered and safe access to the territory of the Donetsk region of environmental and humanitarian organizations of the DPR, as well as international organizations recommended by the DPR. The envisaged result includes restoration, retrofitting and preservation of: buildings located on the territory of the Donetsk region of enterprises (including Avdeevsky coking chemical plant, Azovstal, Konstantinovsky state chemical plant, Dzerzhinsk phenol plant), the shut down or damage of which may pose a threat to the population and lead to man-made emergencies; objects of engineering infrastructure (energy, water and gas supply), the closure of which may pose a threat to the life of the population and lead to a humanitarian disaster. It also includes preparation and implementation of proposals to prevent and reduce the current negative impact on the environment.
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Public Participation,
Public Information,
Education and
Awareness

- Regulated by the law on Environmental Protection of 2015, Law on Citizens Appeals and other legislative acts;
- According to the official reports, 250 lectures (almost 9,000 people), 75 excursions along ecological trails, 142 environmental actions and events, 19 environmental competitions, and 17 environmental videos were created in 2019 alone;
- A joint initiative has been agreed with the Ministry of Education and Science of DPR on training ecologists;
- Information is disseminated to population through TV, radio,, official websites and social media;

Funding and
Expenditure

- In line with the Law of the Donetsk people's Republic "on the basics of the budget structure and budget process in the Donetsk people's Republic» of 2019 and other legislative acts.

Other
