

Establishing the Current State of Mapping Environmental Impacts of Conflicts on Stressors of Climate Change for Sustainability and Resilience of Human Societies

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The article brings out the necessity of establishing and quantifying conflict induced climate change stressors on environment, sustainability and resilience of human societies by estimating their categorical impact on forestry, urban spaces, and emissions, using geo-spatial data analytics. Whilst there has been a growing body of research on the concept of climate-change impact on conflict, it is now increasingly important to focus on research delving into the deadly trap of conflict leading to climate change that many societies are enduring as destruction of environment, biodiversity damage, and negative impacts on livability, sustenance and resilience come to the fore. We propose to study these impacts where a conflict leaves its footprints on environment, where it is of urgent importance to ascertain the quantity of damage done, be it harmful emissions, forest-area destroyed, living space degraded, all of which have calculated carbon footprints, to mobilize global actions against environmental crimes during conflicts. Existing research is partial, fragmented, non-disclosed, highly proprietary, to consider and analyse how the data might be used to understand: the relationship between conflict and climate change, what might mitigate the climate change outcomes of conflict, and what types of attribution of climate change harms might underlie any criminal process relating to accountability for environmental harm.

What is gaining in importance in recent years is that conflicts are leading to climate change caused by wars' destruction of environment, biodiversity damage, and negative impacts on livability, sustenance and resilience. In this work, we focus on the existing state of the art projects exploring specific effects of conflicts on environment and climate stressors like GHG emissions (CO₂, methane, other air pollutants), deforestation, land use changes, and carbon footprint of the conflicts in selected conflict-prone regions across the globe, including Ukraine, by estimating the amount of change. Through literature survey and review of current and past research on conflict-environment nexus, we propose to collate from over 100 such studies, projects and reports, the changes in emissions, surface cover, and individual carbon footprints, over periods of time from 2000 to present, from multiple datasets and sources, to form an idea of pre- and post-conflict environmental changes. We look at methods derived from remote sensing data and high-resolution spatial mapping using supervised training algorithms for scene and natural resource classification. We conclude that a complete study of the overall impact of conflicts and wars on environment and climate is missing, and the quantification would allow for the calculation of overall

carbon footprint of the conflict as a final estimate that links to sustainability goals and resilience of a community, and that the results and outputs have more meaning in the form of spatial mapping of the causative factors, indicators and the stressors of climate change and environmental destruction. The quantified data is a very important support element for crimes against the environment by being able to accurately document impacts, as also to plan actions to mitigate the effect of war on climate, and finally to help people track conflict effects on climate and environment.