Conflict and Climate Change

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Overview

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Background

- **Climate change is a present and escalating global crisis**, yet the carbon impact of armed conflict remains critically understudied.
- Wars in regions like **Ukraine** and **Gaza** highlight how conflict accelerates emissions through fuel use, urban destruction, and carbon-intensive reconstruction.
- This project **simulates the CO_2 impact of war** using scenario-based modeling to estimate emissions linked to military activity and post-conflict rebuilding.
- Our goal is to **quantify a hidden environmental cost of war**, offering insight into the climate–conflict nexus.

Figure: Airstrikes over Gaza- 12 October 2023

Project Objectives

Goal:
To explore how armed conflict contributes to short-term CO_2 emissions through a simplified simulation model.

Specific Objectives:

- Build a basic simulation to estimate **CO_2 emissions linked to conflict-related activities**, such as fuel use and destruction.
- Use data from recent conflicts (e.g., *Ukraine*, *Gaza*) to guide assumptions and scenario design.
- Present clear, **scenario-based comparisons** of emission levels with and without conflict.
- Raise awareness of an **underexplored link** between war and environmental impact.

Expected Methodology

1. **Define Conflict Scenarios**
   - Select 2–3 stylized scenarios (e.g., no conflict, limited conflict, full-scale conflict)
   - Base assumptions on real-world conflicts (e.g., *Ukraine*, *Gaza*)
2. **Collect Emission-Related Parameters**
   - Estimate CO_2 emissions from:
     - Military fuel use (e.g., tanks, aircraft)
     - Urban infrastructure damage (optional, simplified)
   - Use secondary data from SIPRI, IPCC, or published studies
3. **Build a Simple Simulation Model**
   - Code-based (Python or R)
   - Model emissions over a fixed period (e.g., 1 year) for each scenario
4. **Compare Results**
   - Plot and compare emissions across scenarios
   - Highlight key drivers and discuss assumptions and limitations

References

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