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PRODUCING NATIONAL AND SUB-NATIONAL INDICATORS ON CLIMATE-RELATED
NATURAL HAZARDS FOR THE WORLD

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Abstract

Climate-related natural hazards impact societies around the world and climate change poses a growing threat by influencing a hazard's intensity and frequency of occurrence. Natural disasters caused an estimated USD 210 billion of global losses in 2020 alone, representing approximately 0.24% of global Gross Domestic Product. Losses from exposure to natural hazards (i.e. not only disasters) are, no doubt, even more significant and are likely to increase in the future. Therefore, it is of critical importance to understand the potential impact of climate-related natural hazards for countries, regions and communities. In this paper, the OECD proposes twenty hazard and exposure indicators based on seven climate-related natural hazard domains (i.e. extreme temperature, extreme precipitation, drought, wildfire, wind threats, river and coastal flooding) and four exposure variables (built-up area, cropland, forest and population density) using global data sources with high spatio-temporal resolution.

The paper develops methodologies for hazard and exposure indicators for climate-related hazards and calculates them for all countries globally at the national and sub-national levels for the period since 2000 depending on data availability and with a high degree of timeliness. Preliminary results suggest that all countries experience one or more climate-related natural hazards. In addition, significant differences exist between countries in the occurrence and intensity of such hazards, highlighting the urgency to take strong climate change mitigation and adaptation measures to accelerate efforts towards the global goal on adaptation to strengthen resilience and reduce vulnerability to climate change in the context of the Paris Agreement. Future work could focus on improving the availability and accuracy of relevant data sources, and including other climate-related hazards and exposed assets not accounted for in this paper.

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