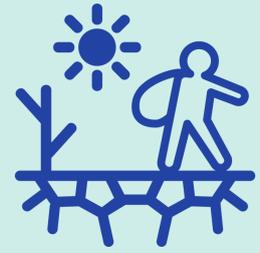


DeepCube Explainable AI pipelines for big Copernicus data Climate induced migration in Africa



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004188

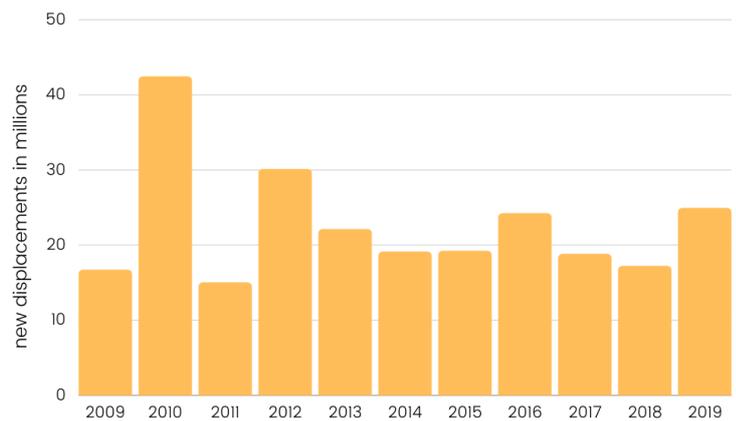
**DEEP
CUBE**

Use Case motivation

The climate crisis ever more occurring in the form of extreme events like floods, droughts and heatwaves deeply impacts the biosphere and the effects are already tangible in the anthroposphere. This Use Case will deal with climate induced migration, approaching the challenges, societal footprint, climate triggers and economic drivers. Climate induced displacement is a huge problem with an average of 25 million new internal displacements per year since the last decade, 95% of which happen in vulnerable regions.



New disaster-related displacements worldwide (2009-2019)
Source: IDMC's 2020 Global Report on Internal Displacement



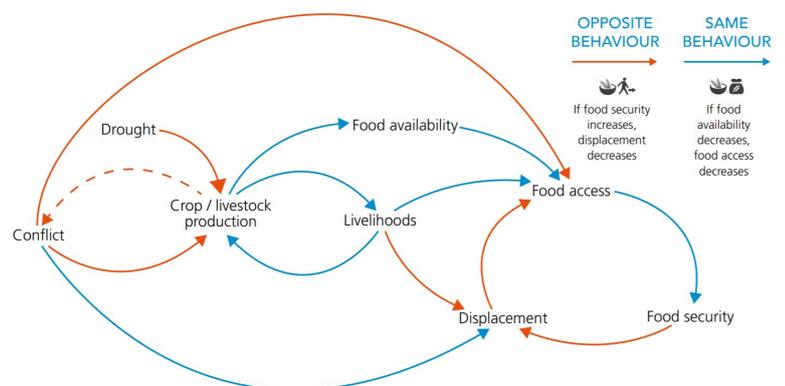
Current gaps

There is a growing tendency in media reports assuming links between climate change, conflicts, and forced migration. However, such kind of cause-effect chain is not always assessed empirically. At present, there is no theoretical approach adequately representing the causal mechanisms through which climate change induces human displacement and migration flows. Climate induced displacement analysis needs to be tackled with innovative AI methods of regression, interpretability and causality, employing rigorous advanced statistical tools, applied to reliable data.

The DeepCube approach

This Use Case will model, anticipate and understand migration flows from consistent data. By collecting and analyzing a large set of potential explanatory variables and confounders, main triggers of internal displacement will be identified. The Use Case Data Cube will embed time series of Earth Observation together with socioeconomic data.

Meaningful ontologies and cause-effects relations to understand variable interactions will be derived applying causal discovery methods. Due to severe droughts and the harsh livelihood conditions in the Horn of Africa, Somalia and Ethiopia will be the first pilot regions of study.



The multi-causal nature of displacement linked to drought. Source: IDMC

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Interested in learning more? Contact us!

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