VIEWS: the political Violence and Impacts Early-Warning System

UNDP Data Thursdays

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17 October 2024

VIEWS
PREDICTING CONFLICT &
HUMANITARIAN IMPACTS

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VIEWS: the political Violence and Impacts Early-Warning System

Forecasts of lethal, organized political violence:
Data from the Uppsala Conflict Data Program

- *Number of fatalities in location and month*
- *Forecasting horizon:* 1–36 months
- *Temporal resolution:* Monthly
- *Geographic coverage:*
  - Global (country level)
  - Africa and the Middle East (grid level)
- *Updates:* Every month

Coming:
Uncertainty model: Forecasts in the form of probability distribution over number of fatalities
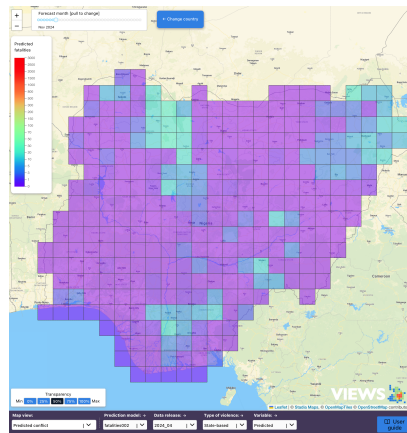
Forecasts for October 2024
based on April 2024 data

VIEWS principles

Public conflict forecasts since 2018

- Fully open access to results
  - Through API, files
  - https://data.viewsforecasting.org
- Comprehensive range of forecast outputs to allow users adapt to own needs
- Uniform coverage

Maximum transparency

- Code available at github https://github.com/prio-data/viewsforecasting
- Evaluation of performance available in research papers
- Only publicly available data

https://data.viewsforecasting.org
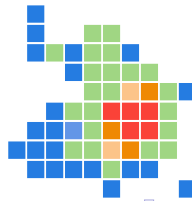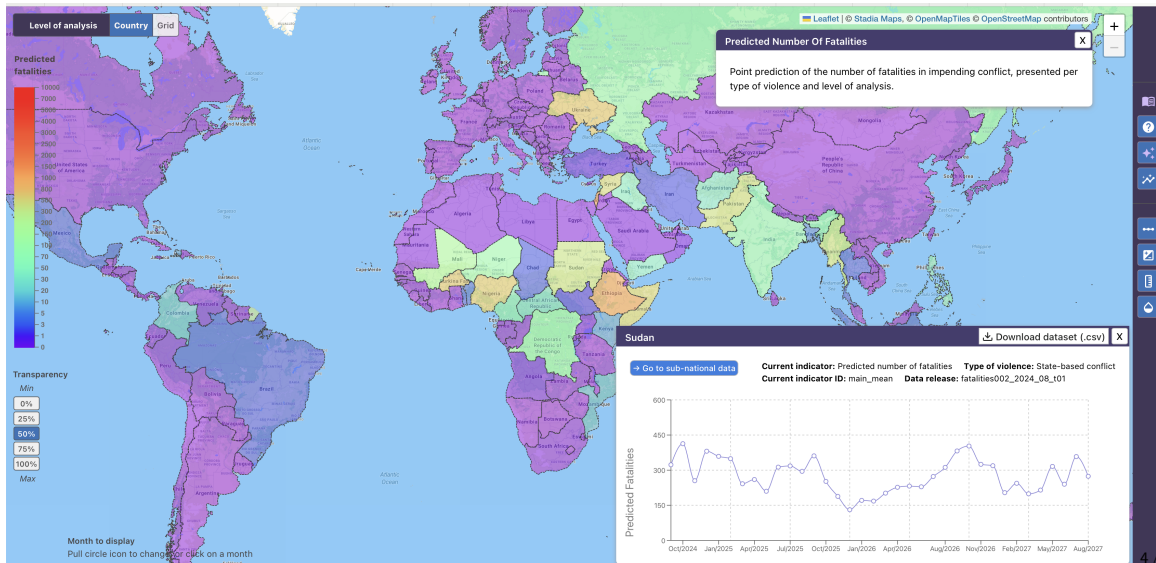
What data and models inform the model?

Forecasting methodology

- Machine-learning models (random forests, GBMs)
- Neural net models (coming up)
- Methods to handle zero-inflated extreme-value distributions
- Research on evaluation metrics to optimize the system

High-quality data from renowned data providers

- Regularly updated (at least yearly, some monthly) and well maintained
- Broad coverage across time and space (many back to 1990)

200+ unique indicators at the country level; 100+ at the grid level

- E.g., conflict data, protests, features based on topic model from news data, structural factors

Full list of indicators on the VIEWS website.

Future developments

**To be useful for anticipatory action, conflict forecasting system have to:**

1. Strengthen ability to forecast new and escalating conflicts
2. Make the outputs more adaptable to various user needs
3. Model the impact of conflict

VIEWS initiatives to achieve this:

- Better use of text data
- Add an actor layer
- Introduce an uncertainty model
  - Uncertainty about input data
  - Uncertainty about appropriate model
  - Statistical uncertainty
- Models of how conflict impacts livelihood and the local economy

How well do we predict?

Out-of-sample MSLE at country level between .25 and .75
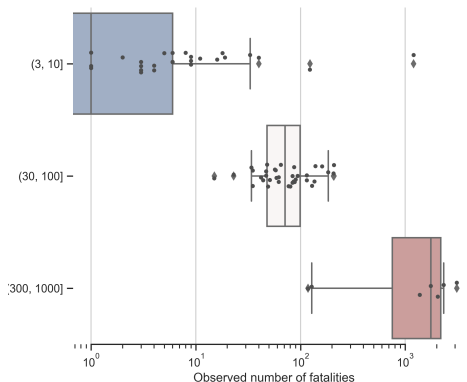
How many were killed per country if we predict the following 12 months into the future:

- 3–10 fatalities:
  - 50% are 1 or higher, median observation is 1, and 95% are below 30
- 30–100 fatalities:
  - 90% are between 30 and 200
- 300–1000 fatalities:
  - all are above 100, and 90% are above 800

Forecasting new conflicts is hard

📖 *Read more:* Forecasting Fatalities (Hegre et al. 2022) (Model: *fatalities001*)

PAIX: Peace and AI center initiative

- Examine the dual nature of AI: how it can both act as an engine for peace and represent a threat to security.
- Develop and test AI tools that can be used to promote peace and development
- Research how to anticipate and counteract the threats to security that AI can pose

PAIX aims at answering two fundamental questions:

1. How can we identify, adapt, and develop AI tools to support decision-makers in achieving and maintaining peace and security?
2. What threats, intended or unintended, to peace and security may arise from AI tools; who are primarily affected; and how can these risks be mitigated?