



DISRUPTIVE TECHNOLOGIES FOR DEVELOPMENT

## ◀ AI Against Crisis and Conflict

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### AI Against Crisis and Conflict



#### Challenge

Situations of Fragility, Conflict and Violence (FCV) present fast-changing conditions that have traditionally been **challenging to monitor due to the scant availability of data**, hampering the Bank's effectiveness in FCV countries at times of crisis.



#### Solution & Technology Used

An **AI-powered** now-casting of food security, prices, and livelihood conditions.



#### Implementation

The project will leverage the existing pilot model, aiming at operationalizing into a live system. The project team will work with country teams as well as the United Nations and other partners (i.e., country experts from ICRC, OCHA, etc.)



#### Impact

**More effective and efficient crisis intervention efforts** through new data sources and advanced machine learning modeling. **'Real-time' insights on critical dimensions such as prices, livelihoods, local market disruptions.** Real Time Data can inform real action and the earlier deployment of finance.



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### Pilot Results



The team **developed and tested the crisis analytics tool** that can ‘nowcast’ food security, prices, and livelihood conditions in over 20 countries in fragile, conflict, and violence-affected (FCV) environment.

- **Created nowcasting methods for food crisis conditions:** Making the most of the available data to nowcast the district level of cereal prices, price indexes, probability of transition to a crisis, child mortality rate, and share of the population in crisis.
- **Piloted nowcasting for 5 country models (Somalia, South Sudan, Chad, Niger, Mali):** The results informed the joint World Bank-UN OCHA anticipatory action operation in Somalia.
- **Demonstrated scalability of the nowcasting capabilities:** Conducted a scalability study by expanding the methods and dataset on 21 countries in collaboration with DECAT and DEC Research Group.  
The IDA19 Crisis Response Window is using the dataset.



### Partners

- **WBG:** The Development Economics Vice Presidency (DEC), Data Analytics and Tools Unit (DECAT), Information and Technology Solutions (ITS), SD Data Lab.
- **UN agencies:** Office for the Coordination of Humanitarian Affairs (OCHA), Food and Agriculture Organization, World Food Programme.
- **Technology partners:** Google Trends, Cuebiq, Facebook, Ookla.



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#### *Pilot Results*

#### Relevance in the age of Covid-19

- **The team used the nowcasting models to inform WBG's Covid-19 response efforts:**
  - Predicted an increased and prolonged impact of the food crisis in Africa due to the pandemic.
  - Leveraged the database to suggest a linkage between air quality and Covid infection.
  - Deployed the Real-Time Crisis Analytics to simulate the spread of Covid-19 using travel data.
  - Applied the nowcasting methods and Google trends analysis to show growing economic anxiety and sectoral impact of Covid-19.

#### Next Steps & Beyond DT4D

- **Informing the WBG's crisis response operations in FCV countries**
  - The project's findings have broad applications from food crises to an emerging public health crisis triggered by Covid-19.
    - IDA 19 Crisis Response Window is using the project dataset and methods in its operation.
    - Food Security Working Group led by Agriculture GP is exploring to apply the project's imputation methods in the WBG Food Security dashboard.
    - Covid-19 related research results were shared through SD Data clinics.
- **Building up the WBG's internal capacity with the predictive analytics**
  - The team gained valuable insights both on the strengths and limits of machine learning.
  - The lessons learned can guide the WBG's use of predictive analytics in its projects.