PROPOSAL FOR INFORM WARNING

An open system to aggregate and present quantified, multi-hazard information to support crisis preparedness and anticipatory action.

June 2021
Introduction

This paper presents a proposal for INFORM Warning - an open system to aggregate and present quantified information to support crisis preparedness and anticipatory action. The proposal is the result of a one year scoping phase carried out by INFORM Partners and other interested organisations and funded by the UK Foreign, Commonwealth and Development Office. The objective of this proposal is to mobilise resources and build a coalition of implementing partners to fully develop INFORM Warning in 2022-2023.

About INFORM

INFORM is a multi-stakeholder forum for developing shared, quantitative analysis relevant to humanitarian crises and disasters. INFORM includes organisations from across the multilateral system, including the humanitarian and development sector, donors, and technical partners. The Joint Research Center of European Commission is the scientific and technical lead for INFORM. INFORM is developing a suite of quantitative, analytical products to support decision-making on humanitarian crises and disasters. The INFORM Risk Index and INFORM Severity Index are in place and providing value to partners.

INFORM uses a collaborative process to develop products that are open and free to use. The objective of INFORM is to improve the quality and accessibility of information available to decision-makers. INFORM partners believe that the availability of shared analysis of crises and disasters can lead to better coordination of actors and better outcomes for at-risk and affected people. By working together, we can reduce the investments required by individual organisations, assure the quality of our analysis and make it available for the common good.

Why we need INFORM Warning

An extensive literature review and consultations with INFORM Partners indicate there is a clear need for open, aggregated, multi-hazard early warning information that is easy to use for decision making. INFORM Warning will focus on anticipatory analysis covering a time period of 1 to 12 months into the future. INFORM Warning will not include information or issue alerts about short-term, forecasted events (e.g. tsunami, tropical storms etc.). Other systems already exist for this purpose.

INFORM Warning concept

INFORM Warning will collect, aggregate and present quantified information that can tell us how risks are changing and how, where and when a crisis could occur. The purpose of this information is to support decision-making around anticipatory actions that can prevent and mitigate crises. The types of information that will be included in INFORM Warning include:

Objectives and scope of INFORM Warning

INFORM Warning will present reliable, quantified, multi-hazard information that warns about risk trends, forecasts, scenarios and events that could lead to crisis impacts in the next 12 months and can be easily used to support decisions on preparedness and anticipatory action. The system will collect, analyse, aggregate and present existing information from a wide range of sources, including all major, known drivers of humanitarian crises. It will provide objective, transparent information that can be used in risk monitoring and early warning processes of INFORM partners and multilateral processes. INFORM Warning is not a replacement for these processes, but is intended to provide high quality, quantified inputs to them. The ultimate result will be improved decision-making around early warning information.

INFORM Warning will bridge the existing gap between the INFORM Risk Index, which measures structural crisis risk and the INFORM Severity Index, which measures the severity of crises once they occur. INFORM Warning attempts to help understand how risks change over the short to medium term (1-12 months) to help anticipate emerging crisis impacts.

INFORM Warning will have global coverage, with more comprehensive coverage of high risk countries. Where possible, the system will provide information at the subnational level.

INFORM Warning will provide high quality, quantified inputs into broader early warning processes, such as the IASC EWEA process or the IFRC’s Risk Watch. It will be up to the owners of these processes to combine the outputs of INFORM Warning with additional analysis, such as intelligence from field networks.

See https://drive.google.com/file/d/1HQyYZ3mW1uTrg-pr_20h0404490q0d32/view?usp=sharing
### Risk Monitor

The Risk Monitor brings together a wide range of dynamic indicators, forecasts and predictions that can help us understand how crisis risk is changing. It presents these indicators in an organized way. The system cleans, normalizes, and categorizes these indicators and the outputs of existing early warning models.

#### Inputs

- Indicators from trusted sources that are updated frequently (e.g., daily, weekly, monthly), or that tell us about cyclical (e.g., seasonal) changes.

- Outputs of existing risk early warning models and other relevant forecasts and predictions.

- Scope of inputs is derived from existing INFORM Risk and Severity analytical frameworks. A data pipeline is used to bring together the data in a database.

### Analysis

The analysis function of INFORM Warning aggregates information from the risk monitor to provide more refined inputs into early warning processes in the form of warnings and alerts.

#### WARN LEVEL

<table>
<thead>
<tr>
<th>Country</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country A</td>
<td>Low</td>
</tr>
<tr>
<td>Country B</td>
<td>Medium</td>
</tr>
<tr>
<td>Country C</td>
<td>Very High</td>
</tr>
<tr>
<td>Country D</td>
<td>High</td>
</tr>
<tr>
<td>Country E</td>
<td>Low</td>
</tr>
</tbody>
</table>

#### ALERT

- **Location**: Country C, Provinces A, B
- **Timing**: 3-6 months
- **Impact level**: Very High
- **Drivers**: Drought season, conflict
- **Impact type**: Food security, displacement

### Human Curation

The complexity of the information contained in INFORM Warning requires human curation to ensure that the system outputs are validated, contextualized, and prioritized. The inputs will also be needed to continually refine and improve the system.

#### Inputs

- Analysis will use the outputs of the Risk Monitor and Analysis elements of the system, as well as limited contextual information.

#### Outputs

- **Validation**: System refinement
- **Sensing**: Interpretation
- **Prioritization**: Need for detailed analysis

### Web Platform

An INFORM Warning web platform will make all the results and underlying data available to users. The website will allow for data exploration, additional analysis, and will provide a mechanism to gather user feedback on the outputs of INFORM Warning. This will ultimately be part of a more sophisticated system of user validation.

#### PRIORITY ALERTS

<table>
<thead>
<tr>
<th>Alert</th>
<th>Country</th>
<th>Timing</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alert 1</td>
<td>Country C</td>
<td>3-6 mths</td>
<td>Very High</td>
</tr>
<tr>
<td>Alert 2</td>
<td>Country F</td>
<td>9-12 mths</td>
<td>Very High</td>
</tr>
<tr>
<td>Alert 3</td>
<td>Country K</td>
<td>1-3 mths</td>
<td>Very High</td>
</tr>
<tr>
<td>Alert 4</td>
<td>Country R</td>
<td>3-6 mths</td>
<td>High</td>
</tr>
<tr>
<td>Alert 5</td>
<td>Country Z</td>
<td>6-9 mths</td>
<td>High</td>
</tr>
</tbody>
</table>

#### Dynamic risk indicators

- **Complexity**: Increasing risk severity
- **Conditions**: Infrastructure, institutional, socio-economic, natural, human, food security, conflict, storm, drought

#### Web platform graphic

- Indicator forecast over 12 months
- Analyst analysis

---

### The INFORM Warning System

This graphic shows more detail of the main elements of the proposed INFORM Warning system. During the scoping phase, INFORM Partners have agreed the overall approach and how these elements will contribute to the objectives of INFORM Warning. A number of proof of concept exercises have been carried out to validate the approach. However, the details of the methodology, terminology, etc., will be finalized during the development phase.
Implementing INFORM Warning

The scoping phase for INFORM Warning has resulted in this proposal and supporting documents, which define the objectives and scope of INFORM Warning and - in broad terms - its technical approach, elements and outputs. INFORM Partners now plan to fully implement INFORM Warning.

Implementation consists of a one-year development phase followed by an ongoing phase of continuous improvement and maintenance. The development of INFORM Warning will use the same collaborative, agile approach used for previous INFORM products. The process will be guided by the INFORM Steering Group and a technical working group consisting of interested INFORM Partners and others.

Existing or new INFORM Partners will host the following functions, which require funding starting in 2022.

### Development Phase - Year 1

<table>
<thead>
<tr>
<th>Position</th>
<th>Coordinator / project manager</th>
<th>Scientific and technical lead</th>
<th>Web development and user experience</th>
<th>Analyst/s</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>1</td>
<td>2</td>
<td>0.5</td>
<td>2</td>
<td>5.5</td>
</tr>
<tr>
<td>Cost (USD)</td>
<td>240,000</td>
<td>340,000</td>
<td>100,000</td>
<td>168,000</td>
<td>$848,000</td>
</tr>
<tr>
<td>Operating cost</td>
<td>50,000</td>
<td>0</td>
<td>300,000</td>
<td>111,000</td>
<td>$461,000</td>
</tr>
<tr>
<td>Total</td>
<td>290,000</td>
<td>340,000</td>
<td>400,000</td>
<td>279,000</td>
<td>$1,309,000</td>
</tr>
</tbody>
</table>

### Continuous improvement & maintenance phase - Ongoing from Year 2, annual

<table>
<thead>
<tr>
<th>Position</th>
<th>Coordinator / project manager</th>
<th>Scientific and technical lead</th>
<th>Web development and user experience</th>
<th>Analyst/s</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>1</td>
<td>1</td>
<td>0.5</td>
<td>3</td>
<td>5.5</td>
</tr>
<tr>
<td>Cost (USD)</td>
<td>240,000</td>
<td>170,000</td>
<td>100,000</td>
<td>216,000</td>
<td>$726,000</td>
</tr>
<tr>
<td>Operating cost</td>
<td>0</td>
<td>0</td>
<td>100,000</td>
<td>111,000</td>
<td>$211,000</td>
</tr>
<tr>
<td>Total</td>
<td>240,000</td>
<td>170,000</td>
<td>200,000</td>
<td>327,000</td>
<td>$937,000</td>
</tr>
</tbody>
</table>

Further information

Read the full INFORM Warning System Requirements and INFORM Warning Development & Implementation Plan.

For further information, or if you are interested in funding or participating in the development of INFORM Warning please write to contact@inform-index.org.
INFORM is a collaboration of the Inter-Agency Standing Committee and the European Commission. The Joint Research Centre of the European Commission is the scientific and technical lead of INFORM. This report is based on the data available at https://drmkc.jrc.ec.europa.eu/inform-index.

This report is produced by the United Nations Office for the Coordination of Humanitarian Affairs on behalf of all INFORM Partners.

INFORM Steering Group

For more information, go to https://drmkc.jrc.ec.europa.eu/inform-index