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INFORM represents a unique effort to move from theory to concrete delivery of risk thinking and risk-informed analysis in the humanitarian, governance and development fields. A collaborative project of the [Inter-Agency Standing Committee \(IASC\)](#) and the [European Commission](#), the global level INFORM is useful for large scale planning and trend mapping. Subnational INFORMs are suited to regional and national planning at a more local, operational level.

The partners created this guidance document to teach others how to build and manage a subnational risk index that supports decisions for disaster response, preparedness, and development programming. It distills and presents the knowledge of the INFORM partner group, and is intended to help understand and learn the coordination process as well as acquire technical skills to build models yourself as part of INFORM subnational initiatives.

The document is written for both leadership and technical level professionals leading and/or participating in the INFORM model development process. It is designed especially to guide technical practitioners, and project managers who will work with the humanitarian and development community and governments to design, build and maintain the network.

The INFORM partners are a wide range of non-governmental organisations, United Nations agencies, governments, as well as private and technical organizations who have come together to create a collaborative understanding of risk.



Overview

Module 1 - Introduction to INFORM and the guidance

Module 1 provides a description of the guidance document; it discusses the vision and principles of the INFORM approach and touches on objectives, uses, and the rationale for putting a subnational INFORM Risk Index in place.



Module 2 - Managing the INFORM subnational process

Module 2 discusses managing the INFORM Subnational Risk Index process. INFORM includes data crunching, but buy in, participation and partnership are also an essential part of the methodology. Practical elements like resourcing and how to determine if an INFORM model is right for your context are also introduced.

Module 3 - Designing, building and maintaining the model

Module 3 is technical. The first part includes an overview of risk, the components of the model, and the tools and templates required to complete and share the model. The second part outlines the technical process and specific steps required to process raw data into a subnational INFORM model and index.

Module 4 - Communicating and promoting the model

Module 4 outlines ways to promote the model. Beyond developing a good model, INFORM partners must advocate within the humanitarian, development communities and governments, to demonstrate the benefits of the model, and ensure that all partners understand the INFORM process and the opportunities it provides.

Module 5 - Using INFORM subnational: practical examples

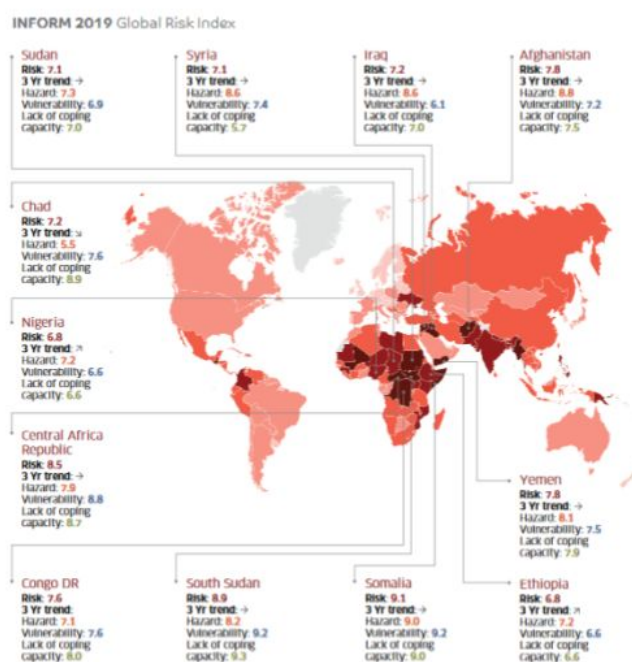
Module 5 provides practical examples on INFORM's use in decision making and planning exercises. Examples of INFORM's uses to date are provided, as well as descriptions on how to link INFORM to existing processes in order to improve contextual awareness and service delivery.

MODULE 1: Introduction to INFORM and the guidance

1.1 INFORM key features

INFORM is an open-source risk assessment methodology for crisis, governance and development planning. It is used by decision-makers to analyse and visualise risk and supports decisions on crisis, disaster response, preparedness, resilience, risk reduction and sustainable development issues.

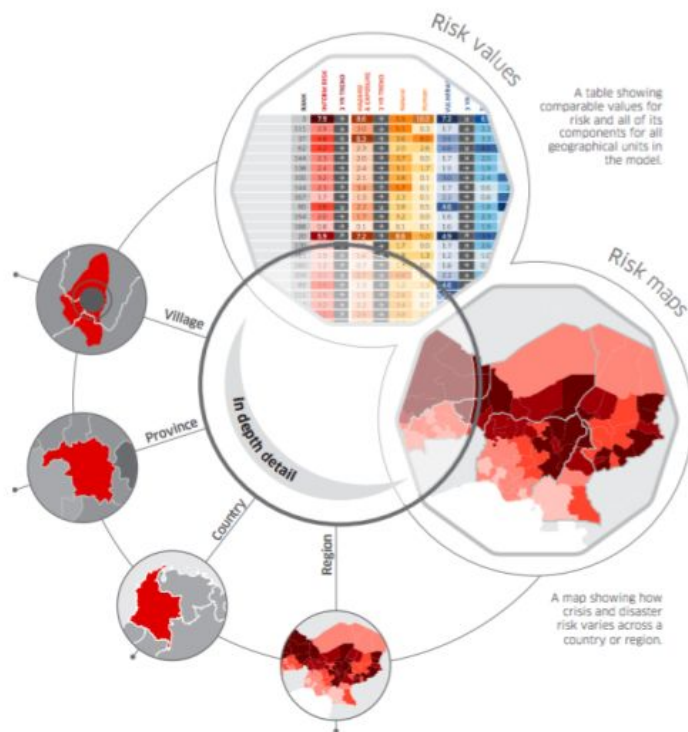
The INFORM initiative already publishes a global INFORM risk index, which consists of national level risk assessments for 191 countries. The guidance takes the Global INFORM process which exists using national level data¹ and adapts this system to the National and Regional context by using subnational data².



The INFORM Subnational model uses the same risk assessment methodology and development process, but is adapted to a region or country level. An INFORM Subnational risk index captures a detailed picture of risk and its components at the provincial, municipal or village level that is comparable across a region or country. The result is a risk model for humanitarian crises and disasters that has the same features and benefits as the global model, but is subnational in resolution and can be applied at the province, municipal or village level.

¹ Admin 0, one risk score per nation

² Admin level 1 and below



Subnational models profile regional and national risk by developing indicators that reflect hazards and conditions from these areas. The Subnational INFORM process is flexible- partners can identify the most relevant components of the model to create a highly customized product. The Subnational model offers high resolution risk mapping profiles, and frequent, validated updates for risk assessments based on national and regional planning cycles.

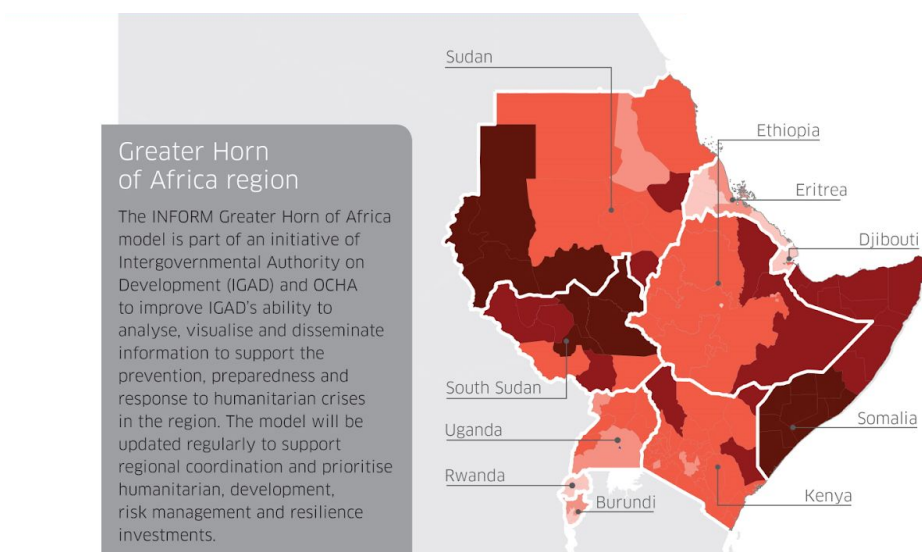
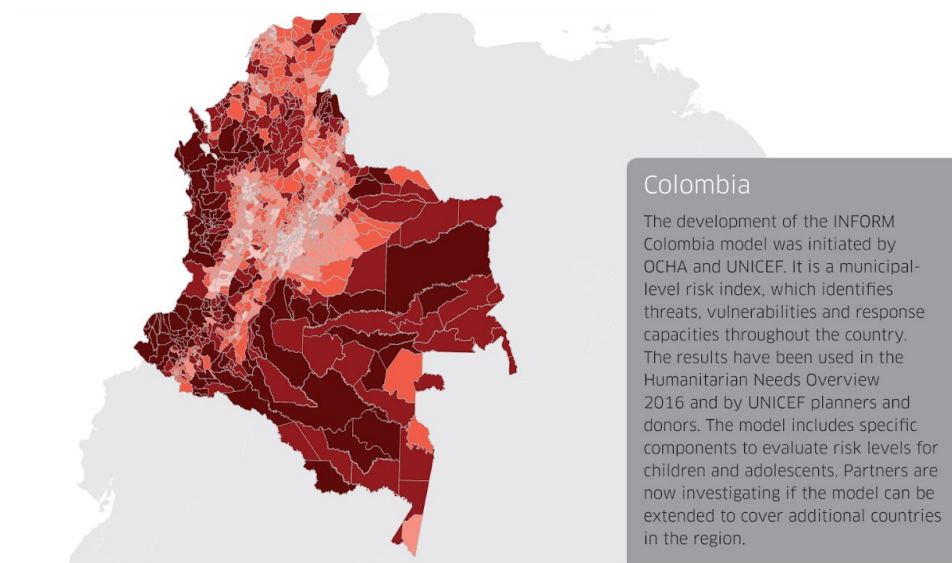
Another feature of INFORM is that models are developed collaboratively, resulting in an open, shared analysis of risk that can be used by many organisations. This approach is intended to ensure that collective actions and resources to address crisis and disaster risk are aligned with the location and nature of the risks.

The process of developing an INFORM Subnational model is locally owned and managed. It is a cost-efficient process that is supported by global INFORM – a collaboration of humanitarian, development, government and technical partners.

This approach ensures that each model has local buy-in, is used in local analysis and decision-making processes, and is adapted to local risks. In addition, the model draws on global resources and expertise and validated according to global standards and best practices.

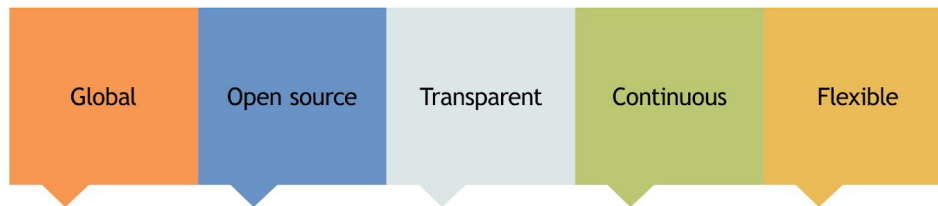
An example of a subnational country model is that of Colombia; an example of a subnational regional model is that of the Greater Horn of Africa. Additional pilot subnational models published prior to 2019 include Niger, Guatemala, Lebanon and Colombia and, at regional level and East Africa and the Sahel.





1.2 INFORM values and guiding principles

INFORM models are based on a set of guiding principles that form the foundation of the partnership. All models are global, open source, transparent, continuous, and flexible.



Global - The INFORM model covers 191 countries, providing one score per country. In the case of regional-national models, 'global' means complete coverage of the region or country of interest.

Open source - All data used in INFORM model are in the public domain and the INFORM partnership includes many data source organizations. All results are freely available.

Transparent - The methodology and sources are published and available for review by all.

Continuous - INFORM models are always available, regularly updated, and comparable over time. Subnational models developed in different contexts are tailored to specific risks and therefore are not comparable to each other or to the global model.

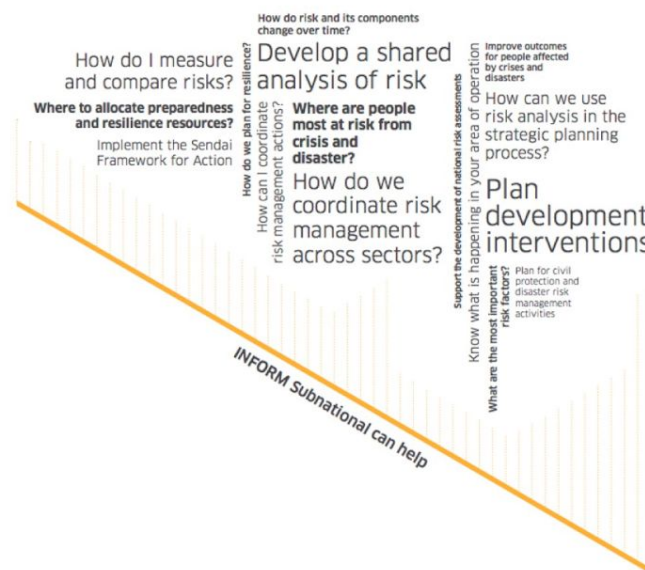
Flexible - INFORM is a standalone model to establish a common, basic understanding of risk but it can be adapted to incorporate additional organisation-specific, geographical or thematic components. The subnational models demonstrate this flexibility by capturing locally relevant risk.

1.3 Rationale for developing an INFORM model

Using INFORM can lead to better outcomes for institutions and people facing complex risk.

Leadership and coordination benefits include:

1. **Credible shared analysis** - The inter-agency, 'brand neutral' INFORM methodology and outcome bring together a cross-section of social actors that work together to identify challenges and map risk. The process can create a credible, shared analysis through collaboration, data exchange, and joint action- irrespective



of the final product. Uniting government, civil society, aid actors and academia around a risk mapping process is beneficial in any operating context.

2. **Promotion of resilience thinking** - The INFORM methodology is emerging as a leading tool for multi-dimensional resilience thinking and programing. Humanitarian organizations and governments are increasingly eliminating the silos that separate humanitarian response, development and disaster risk reduction programing. The INFORM tool gathers data from a wide range of sources to create a wide-spectrum view of risk and contribute to integrated programing.
3. **Decision support** - The INFORM model can support other tools such as the World Food Programme's Integrated Context Analysis, or the Food and Agriculture Organization's RIMA tool, to enhance transparent, quantitative decision making about humanitarian, development and disaster risk reduction programing.

Beyond leadership and coordination benefits, the INFORM methodology provides the following technical benefits:

1. **Unifying diverse datasets** - Participant organizations involved in the process and supporting Project Managers who run the process conduct a broad based, impartial data inventory to locate and vet existing relevant datasets across all sectors. This data mapping process can be a valuable addition to other operating contexts.
2. **Integrated analysis and discovery** - The process compares data collected through data cleaning, scaling and processing to make each dataset comparable across seemingly unrelated sectors. This analytical process allows comparison and analysis in previously separate spheres, potentially leading to new connections and conclusions based on open-source evidence.
3. **Trend mapping** - With proper data and system maintenance, the INFORM model can track and demonstrate overall risk trends, as well as movement within each component of hazard, vulnerability and capacity.

INFORM subnational models have additional uses. These include:

- Quantitative foundations for national government risk and development planning that are integrated across sectors;
- Stand alone risk analysis and management tool and system to integrate risk management into humanitarian, government, development, prevention and preparedness planning;
- Evidence-based, quantitative scores for planning processes such as the Humanitarian Needs Overview (HNO), the United Nations Development Framework (UNDAF), the Humanitarian Program Cycle (HPC), and Resilient Systems Analysis (RSA); and
- Potential links to national/regional private sector insurance entities for shared analysis, insurance based interventions.

1.4 Training objective and learner profile



INFORM believes the following equation to be true: Better risk assessment = better humanitarian programs = better outcomes for crisis affected people across the world.

The training provides process and technical guidance to develop Subnational INFORM models, and targets all potential INFORM partners in Government, international agencies, development partners, civil society and/or the private sector. The training helps INFORM partners understand, plan for and implement the INFORM Subnational model process.

The training also distills information collected through the implementation of a pilot Regional INFORM model for Africa’s Sahel and East Africa regions, and subnational INFORM models in Niger, Guatemala, Lebanon and Colombia.

The training is designed for both coordination and data specialists. Coordination and data characteristics are both crucial for a successful INFORM subnational process. Each profile is equally important. You can find both data and coordination skills in one person, or you may need a team to ensure all elements are covered.

Data and coordination skills required

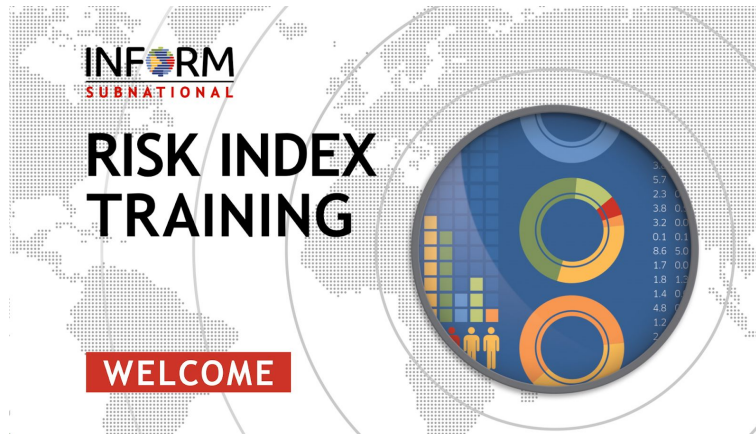


The data profile is often covered by a technical team member working in the field with government, UN or NGOs managing data, and creating maps and graphics. They work to coordinate data sharing (a challenging task!) and make products such as maps and graphics.

Coordination professionals are responsible for ensuring collaboration, buy-in and managing the workshop and participatory elements of the INFORM process.

1.5 Training materials

In addition to this text-based guidance note, an online video delivers audio and video support to help users complete all stages of the INFORM subnational process. Click on the picture below to access the on-line [INFORM Subnational Risk Analysis Training](#).

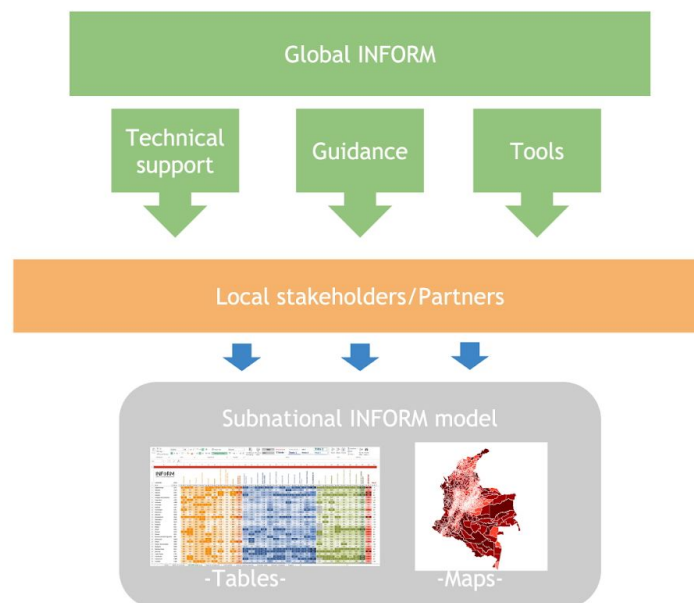


MODULE 2: Managing the INFORM Subnational Process

Module 2 shares knowledge on managing the INFORM subnational process. INFORM is much more than data; the model is meaningless without partner buy in, participation and use. Partners come together to create a framework, share data and build a model, then maintain the model over time.

The module focuses on the coordination and leadership elements of defining and managing a process for the INFORM subnational model. The operating model, roles and responsibilities, and support from various INFORM partners are discussed. In addition, the process itself is outlined, with a focus on the complex phase of building the model, as well as required resources and sustainability. Finally, a decision support tool to determine if the Subnational model is right for your context is presented.

2.1 INFORM operating model

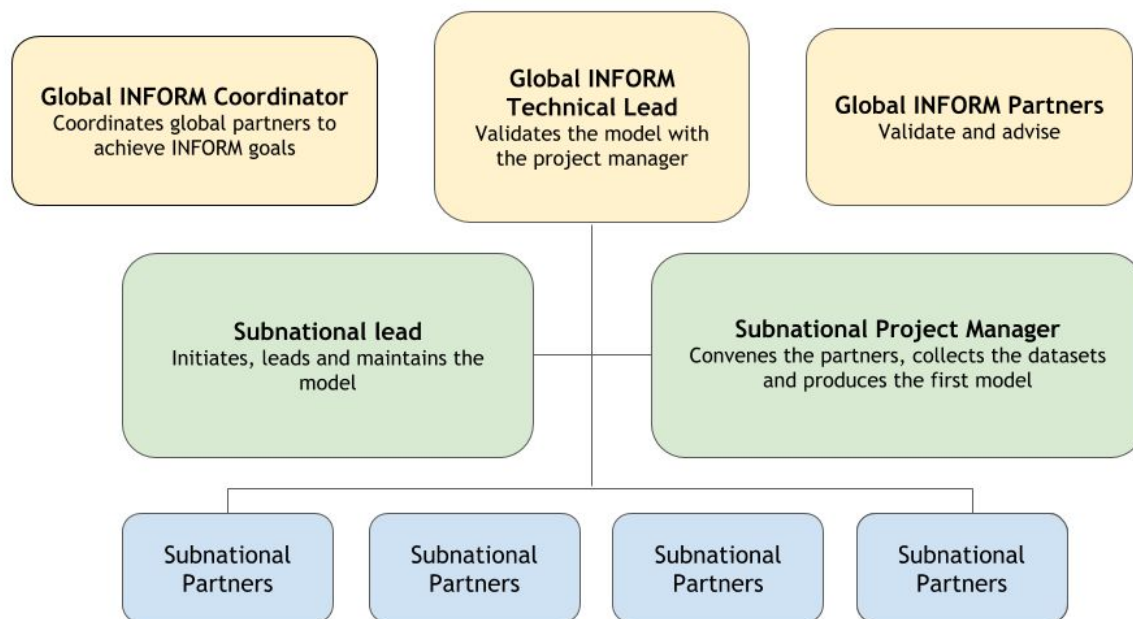


The development of an INFORM model is a locally owned and managed process supported by the global INFORM initiative. This support consists of guidance, technical support and tools. The outcome is a regional or national INFORM model consisting of tables and maps that is owned, maintained and used locally, and validated according to global standards.

Like the global INFORM models, subnational models are developed through a consultative process that includes relevant and interested stakeholders. The process for the development of the model is open and transparent and the results freely shared.

2.2 Roles, responsibilities and expertise

Partner participation is an essential component of a process. Accordingly, it is essential to identify the intended audience in your national or regional context for the model at the start. What does this audience need? Are they information professionals developing coordination products, local government, or a wide-ranging set of organizations with diverse interests? This determines what components you choose for the model, and how you communicate, publicise and update it.



	Role	Responsibility	Expertise
	Subnational Lead	Focal point and process owner in collaboration with local partners Ensures funding for the process in collaboration with the local partners Commits to maintaining the model	Knowledge of the Subnational context Ability to convene the partners and show leadership
	Subnational Project Manager	Work with Lead to convene the partners, collect the datasets and builds the first model Preparation and background work Consultation with key partners	Context knowledge Data design and process leadership

		Workshop Centralizing data Processing data Collaborating with Technical Lead to build the first model	Risk management Information management
Subnational Partners	Work with the Subnational Lead to initiate and maintain	Provide knowledge and data Collaborate with the Subnational Lead	Relevant sector/cluster expertise and data knowledge
Global INFORM Coordinator	Coordinate global partners to achieve INFORM goals	Leading strategy development and model implementation	Strategic vision Risk management
Global Technical Lead (Currently Joint Research Council)	Validates the model with the Project Manager	Validates the need for the model Processes data Assembles the model Updates after first comment round	Leadership Risk management Data science

2.3 INFORM subnational process overview

The next graphic details the role of each stakeholder throughout the Subnational INFORM process.

Process Phase Map

	Vision	Application	Determination	Build	Review	Publish	Use	Maintain	Communicate
	Decide to create an INFORM Model and establish a use case at the outset	Prepare and submit application		Engage consultant Establish timeline Initiate build process	Local lead initiates review		Use in agreed process	Maintain and update the model as needed	
Subnational Lead									
Subnational Partners	Lead and partners agree on the vision Establish local steering group at the outset	Support application as needed			Local partners review		Use in agreed process	Support maintenance use and update	Promote validated national/regional models on global INFORM platform
Global INFORM			Review and advise on application		Global review and validation Decision on INFORM brand usage			Help desk support, maintain web platform for Regional-National models	
Global INFORM Coordinator			Review and advise on application	Broker contact between consultants, JRC and Subnational Lead	Review and monitor progress	Ensure results published		Liaise with Lead on maintenance	Liaise with lead on communications
JRC			Review and advise on application		JRC review and validation Decision on INFORM brand usage	Publish on JRC platform for open use		Help desk support, maintain web platform for Regional-National models	
Project manager				Contract with Local Lead Conduct the build process in the field	Support			Engage as needed	
Timeframe	As needed	As needed	Quarterly application review	4 weeks prep 2 week field mission	8 weeks review		As needed	Quarterly, annual or bi-annual update	4 weeks comms outreach around delivery/update

Each phase is described:

Vision - The Subnational Lead develops a vision for the INFORM model in consultation with subnational partners that establishes a use case for the tool, and describes where the process will integrate into existing and future planning processes. The term 'use case' simply means: How do we use this tool, and why we need the tool?

Application - The Subnational Lead completes an application to initiate the process using a template provided by Global INFORM. The template documents the vision, use case, integration strategy and maintenance plan. The application requires information on how the Subnational Lead and Partners will fund the construction and maintenance of the tool over time.

Determination - In the determination phase, INFORM Global partners and global Technical Lead review the application according to established criteria and determine if the model should proceed. If approved, the process proceeds to the next phase, termed the Build phase.

Build - Once the application is approved, Local Partners and the Subnational Lead complete the model with optional support from a Project Manager. This phase is the most complex; accordingly, a detailed description is provided in section 2.6 and Module 3 is dedicated to the technical aspect of the Build phase.

Review - Once the Build phase is complete, local Partners and INFORM Global team review and validate the model in turn, suggesting and calling for changes as required. There may be discussions around indicators choice, as well as data processing and computation.

Publish - In this phase, the Technical Lead publishes the model on a global web platform for open use; the website is located at www.inform-index.org. Do review and familiarize yourself with the site, and its data visualization tools

Use / Implementation - The risk models' results and supporting data are freely accessible. Stakeholders use the model for general planning and risk management purposes, as well as specific processes such as the HNO and UNDAF, UNISDR Sendai Action Plan, National Risk Assessments or other government planning exercises.

Communications - An effective communication strategy and its implementation helps stakeholders see the value and utility of INFORM for their work. The Subnational Lead ensures dissemination and awareness of the model. Communications efforts could include blog posts, events, and reminding partners about the analysis in meetings, INFORM Global partners can also promote the model at the global level to make sure all partners know about it and want to use the material.

Maintain - Subnational Partners and the Lead update the model on the agreed time frame with validation from the Global Technical Lead. The INFORM Subnational model uses the most current data available. In most contexts, partners choose to update the model with new data every 12 months. However, for example, in Niger, given the dynamic context, partners elected to update the model every six months.

Updated results are published on the Global INFORM web platform. The update time frame also depends on the availability of new data and the need for an updated product to coincide with planned strategy process such as the development of a strategic response plan or United Nations Development Assistance Framework (UNDAF).

One of the most challenging aspects of the INFORM process is maintaining the model with rigour and consistency over time. It is easy to build something once, but keeping it going over the long run can be hard. The way to overcome this challenge is to embed the work and make it an essential part of an in-country planning cycle that happens every year.

2.4 Support from Global INFORM to Local Lead and Local Partners

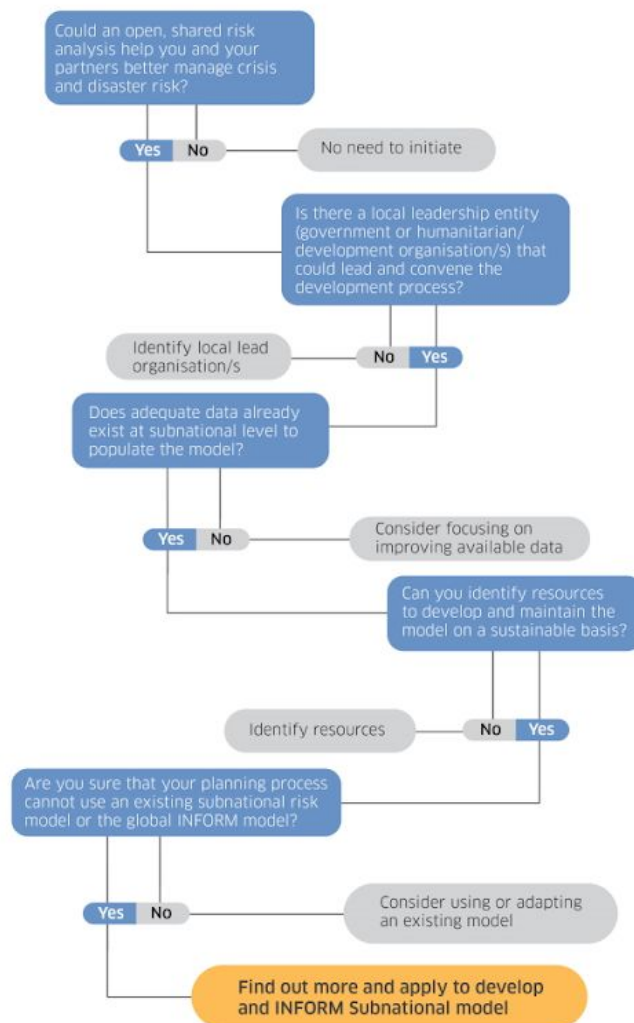
The Global INFORM partnership is a system of people and resources that support the INFORM subnational index process. Specifically, it provides:

- **Written guidance on process and technical issues** - In addition to the technical guidance and the training tool, INFORM Global Partners will make available a shared file with project and process management tools to support all phases of the model.
- **Access to a trained and accredited Project Manager pool** - You will have access to a trained pool of Project Managers with a range of language and technical skills to support the model construction process.
- **Technical review** - Throughout the process, INFORM Global Partners and the Global Technical Lead will provide technical review and advice to the Subnational Lead and Partners.

- **Validation** - Global Technical Lead, now the European Union's Joint Research Center (JRC) and INFORM Global Partners review and validate all models to ensure accuracy and consistency.

2.5 Decision tree: Should you do an INFORM Subnational model?

The following decision tree graphic can help you determine if an INFORM model matches your needs. Please review each step of the process to help you determine if the process is right for your context. The most important thing to remember is that the INFORM model is not for all situations; you must have a partner group willing to participate, data available, a local budget, and leadership willing to drive the process.



2.6 Focus on 'Build' phase

The build phase is the most complex. It is about connecting the idea for the model to the key stakeholders in the subnational context so they can understand, support and provide data to the model.

The Project Manager generally promotes the idea to the key partners, then works with them to uncover the best available data sources to build the model.

The Project Manager pool maintained by global INFORM consists of independent contractors and humanitarian consulting firm professionals. The Subnational Lead contracts directly with the a Project Manager and works under an informal 'exchange of letters agreement' with the INFORM Global partners and Technical Lead.

1. INFORM operating model
2. Create and verify project plan with timelines
3. Remote consultation
4. Initiate admin actions
5. Update data and process management tools
6. Model definition and data collection
7. Vet, clean and process the data
8. Centralize data into a shared file
9. Construct the model
10. Review with core group
11. Review and validate with full Local Partner group
12. Publish on technical Lead web platform

12 steps are involved in the build process:

1. Operating model - The Subnational Project Manager and INFORM Global staff review the vision and application to validate the approach, desired final product and timeline as set out in the application. They make sure the vision is realistic and achievable. Changes to the approach can be made at this stage if necessary.

2. Create and verify project plan with timelines - The Subnational Project Manager creates a concept note and a detailed project plan that includes timelines, stakeholder responsibilities and milestones. The Project Manager shares this project plan with the Local Lead and Partners, as well as with Global Partners for their awareness and support.

3. Remote consultation - The Subnational Project Manager and the Subnational Lead discuss the vision, approach, potential data sources and administrative arrangement for the mission and workshop. The project manager and the technical lead should strive to build a strong working relationship with each other, and all parties.

Investigating potential data sources for the model takes time- they will spontaneously appear from partners during the process. Experience shows that most of the data comes from the Subnational Lead and a few key operational partners. 'Pools' of data and access to them can be organised well in advance of the data collection workshop discussed later. Below are examples of indicators and their sources.

Category	Component	Indicator	Year	Unit	Provider
Natural	Insurance	Physical exposure to tsunami	2015	Average annual population exposed per country	UNISDR, Global Risk Assessment 2015
Natural	Potential data sources		2015	Average annual population exposed per country	UNISDR, Global Risk Assessment 2015
Natural			2015	Average annual population exposed per country	UNISDR, Global Risk Assessment 2015
Natural			2015	Average annual population exposed per country	UNISDR, Global Risk Assessment 2015
Natural			1989-2014	Average annual population affected per country	EM-DAT, CRED
Natural		Drought	1989-2014	Average annual events per country	EM-DAT, CRED
Natural		Drought	1983-2013	Average annual events per country	ASIS, FAO
Human		Current Conflicts Intensity	2014	Index	Conflict Barometer, Heidelberg Institute
Human		Projected Conflict Risk	2015	Index	JRC
Social-economic vulnerability		Poverty & Development	2013	Index	UNDP, Human Development Report
Social-economic vulnerability		Poverty & Development	2012	Index	UNDP, Human Development Report
Social-economic vulnerability		Inequality	2013	Index	UNDP, Human Development Report
Social-economic vulnerability		Inequality	2003-2013	Index	World Bank
Social-economic vulnerability		Economical Dependency	2012-2014	USD	OCHA, FTS
Social-economic vulnerability		Economical Dependency	2011-2012	USD Million	OECD, DAC
Social-economic vulnerability		Economical Dependency	2012	% of GNI	World Bank
Vulnerable groups		Uprooted people	2015	Number	UNHCR
Vulnerable groups		Uprooted people	2015	Number	Internal Displacement Monitoring Centre
Vulnerable groups		Uprooted people	2014	Number	UNHCR
Vulnerable groups		Other Vulnerable Groups	2012	per 100,000 people	WHO, Global Health Observatory Data Repository
Vulnerable groups		Other Vulnerable Groups	2012	%	WHO, Global Health Observatory Data Repository
Vulnerable groups		Other Vulnerable Groups	2012	per 100,000 people	WHO, Global Health Observatory Data Repository
Vulnerable groups		Other Vulnerable Groups	2013	per 1,000 live births	UNICEF
Vulnerable groups		Other Vulnerable Groups	2012	%	UNICEF
Vulnerable groups		Other Vulnerable Groups	2013-2015	Number	EM-DAT, CRED
Vulnerable groups		Other Vulnerable Groups	2014-2016	%	FAO
Vulnerable groups		Other Vulnerable Groups	2014-2016	%	FAO
Vulnerable groups		Other Vulnerable Groups	2014	Index	FAO
Vulnerable groups		Other Vulnerable Groups	2014	Index	FAO
Institutional	Governance	Government Effectiveness	2013	Index	World Bank, Worldwide Governance Indicators
Institutional	Governance	Corruption Perception Index	2014	Index	Transparency International
Institutional	DRR Implementation	HFA Scores Last recent	2007-2015	Index	ISDR
Infrastructure	Communication	Adult literacy rate	2005-2013	%	UNESCO
Infrastructure	Communication	Access to electricity	2012	%	World Bank
Infrastructure	Communication	Internet users	2014	%	World Bank
Infrastructure	Communication	Mobile cellular subscriptions	2014	per 100 people	World Bank
Infrastructure	Physical Connectivity	Improved sanitation facilities (% of population with access)	2015	%	World Bank
Infrastructure	Physical Connectivity	Improved water source (% of population with access)	2015	%	World Bank
Infrastructure	Physical Connectivity	Road density	2014	km of road per 100 sq km	OpenStreetMap
Infrastructure	Physical Connectivity	Railway density	2008-2014	per 1,000 people	WHO, Global Health Observatory Data Repository

It is also important to review existing documents related to the area of study, such as risk, vulnerability or single hazard assessment. They can be used as inspiration, benchmarking and comparison during the development phase of the model.

4. Initiate admin actions - The Subnational Lead and Project Manager work together to initiate administrative planning processes for travel (such as visa, accommodation), meetings (preparatory consultations with key stakeholders and working groups) and the INFORM workshop (a formal consultation in plenary with all stakeholders to define the model and identify data). Administration takes time and energy. Adequate time to put things in place is required. The Subnational Lead designates an administrative focal point - someone who can help prepare the workshop and make sure partners are aware of the process, and ready to participate.

5. Update data and process management tools - The Project Manager modifies the templates provided by global INFORM to the particular context, including the project plan, contact list, consultation agenda and workshop agenda. Items can be shared on a cloud file for easy collaboration with stakeholders. Below is an example.

Tools for managing the process and building the model

Project management tool

Project: **InfoRM - Lebanon**
Updated: **12/15/2015**
Status: **Active**

Ser	Tasks	Owner	Start	End	Time Period	Work Days	% Complete	23/09/2015	30/09/2015	07/10/2015	14/10/2015	21/10/2015	28/10/2015	04/11/2015	11/11/2015
A Contracting															
a.1	Discuss project and sign contract	Consultant / Lead	10/29/2014	10/29/2014		7	0	100%							
a.2	Administrative processes	Consultant / Lead	10/29/2014	10/29/2014		0	0	100%							
a.3	Refine and selection Tell Rules	INFORM Global/Consultant/Lead	10/29/2014	10/29/2014		64	0	100%							
1 Phase 1 - Scoping + Preparation															
1.1	Review existing risk material for Lebanon	Consultant	12/16/2014	13/06/2015		46	5	81%							
1.2	Research existing external risk sources	Consultant	12/22/2014	12/26/2014		4	1	100%							
1.3	Team meetings and discussion	aid/JRC/Consultant/INFORM Glob.	12/22/2014	1/6/2015		8	1	100%							
1.4	Liaison with HDX on Lebanon	Consultant / CJ	11/20/2015	1/6/2015		5	0	0%							
1.6	Workshop logistics and data request	Lead	11/20/2015	12/23/2015		5	1	100%							
1.7	Compilation of data from Lebanon IAWG	Consultant	1/1/2015	1/30/2015		30	1	85%							
2 Phase 2 - Conceptual Framework + Field															
2.1	Secure booking and visa	Consultant	12/16/2014	12/17/2014		8	1	100%							
2.2	Pre mission logistics confirmed	Lead/Consultant/Admin	12/17/2014	12/20/2014		4	1	100%							
2.3	Remote briefing with JRC	Lead / Consultant / Others	12/20/2014	12/20/2014		1	1	100%							
2.4	Mission to Lebanon	Consultant	21/10/2015	2/8/2016		14	13	93%							
2.5	Remote meetings with risk mapping Focal Points	Consultant/Lead	12/17/2014	12/24/2014		8	1	100%							
2.6	Prepare workshop documentation	Consultant	21/10/2015	21/10/2015		15	1	100%							
2.7	Workshop preparation	Consultant / Lead	21/10/2015	21/10/2015		15	1	100%							
2.8	Deliver workshop	Consultant	21/10/2015	21/10/2015		1	1	100%							
2.9	Follow up with key partners in person	Consultant	22/10/2015	2/7/2016		8	1	86%							
2.1	Mission debrief with UNDP focal points	Consultant	22/7/2015	2/7/2015		1	1	100%							

6. Model Definition and data collection - The suggested field data collection exercise includes 7 days for consultation, a 1-day workshop, and 2 days follow up and planning- two weeks total. The activities in this phase include key partner consultations, the data collection workshop, defining the model structure, and identifying data sources.

- *Consult with key partners* - The key data holders and facilitators of the process or identified. Meetings are conducted to build the relationship, explain the process and request support and data.
 - *Organise workshop* - This is one of the most dynamic parts of the process, where partners working on a wide variety of issues come together to assess risk. The process and conversations are enjoyable. The context that the model describes is considered and opinions shared on defining risk. Sample templates for the workshop agenda and presentations are provided. These should be reviewed and adjusted to match unique situations. Presenters should practice in advance and try to anticipate questions from partners.
- Define the model structure* - During the workshop, partners define changes required to the global model to best reflect risk in this National-Regional context. This is usually achieved by asking partners attending the workshop to participate in a discussion about one of INFORM's three dimensions: Hazard, Vulnerability and Capacity. Partners work together to define the key components of each dimension and present the results of the discussion to the plenary for feedback and additional discussion. Most issues can be resolved in the plenary session. The discussion and hand drawn graphics and lists that partners elaborate serve as the basis for the data model that will be built following the workshop.



- **Identify data sources** - Also during the workshop, stakeholders identify datasets to populate the model. The data or verbal/written commitments for the data should be secured at this stage. The Global Technical Lead has access to some key datasets at the subnational resolution. These should be reviewed in advance but not allowed to influence subnational partners' contributions during the component selection process. This is a 'wish list' of the idea datasets and sources that should populate the model for the best possible understanding of risk. Partners usually suggest much more data than are actually available as datasets. However, this is an important vision setting exercise. The final model tries to attain the vision set by the workshop, but available data determines the actual profile of the final model.

7. Vet, clean and process the data - The Project Manager reviews all suggested data, vets for accuracy, provides the metadata and processes the data into a format that can be uploaded to a shared file for further processing. It is important to specify the relevance of the selected datasets (why this indicator has been suggested, and how it fits with the theoretical framework).

Vet, clean & process the data

Dimension	Category	Component	Sub-Component	Indicator Name	Description	Priority (1-3)	Data Availability C	Relevance	Validity / L
Vulnerability	Social - economic	Economic growth	Poverty	Proportion of population living below the national poverty line, by sex and age	SDG	Medium			
Vulnerability	Social - economic	Economic growth	Poverty	Multidimensional Poverty Index					
Vulnerability	Social - economic	Economic growth	Poverty	Proportion of men, women and children of all ages living in poverty in all its dimensions	SDG	Difficult			
Vulnerability	Social - economic	Economic growth	Workforce and economic productivity	Proportion of unremunerated work		Difficult			
Vulnerability	Social - economic	Economic growth	Workforce and economic productivity	Number of small and medium-sized enterprises created in the last 12 months		Difficult			
Vulnerability	Social - economic	Economic growth	Workforce and economic productivity	Proportion of informal employment in non-agriculture employment, by sex	SDG	Medium			
Vulnerability	Social - economic	Economic growth	Financial sector	Proportion of the population whose incomes are based solely on agricultural production					
Vulnerability	Social - economic	Economic growth	Financial sector	Access rate to microcredit					
Vulnerability	Social - economic	Education condition	School enrolment	Proportion of children and young people: (a) in grades 2/3; (b) at the end of prim SDG		Medium			
Vulnerability	Social - economic	Education condition	Adult literacy	Adult literacy rate		Medium			
Vulnerability	Social - economic	Education condition	Education quality	Students / teacher ratio		Medium			
Vulnerability	Social - economic	Education condition	Education quality	Students / classroom ratio		Medium			
Vulnerability	Social - economic	Food security and nutrition	School enrolment	Drop out school rate		Medium			
Vulnerability	Social - economic	Food security and nutrition	Food security	Prevalence of moderate or severe food insecurity in the population, based on t:SDG		Easy		Percentage of population in IPC pl	
Vulnerability	Social - economic	Food security and nutrition	Malnutrition	Prevalence of stunting (height for age <2 standard deviation from the median of SDG		Easy			
Vulnerability	Social - economic	Food security and nutrition	Malnutrition	Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from SDG		Easy			
Vulnerability	Social - economic	Health condition	Mortality	Maternal mortality ratio	SDG	Medium			
Vulnerability	Social - economic	Health condition	Mortality	Under-five mortality rate	SDG	Medium			
Vulnerability	Social - economic	Health condition	Epidemic	Malaria incidence per 1,000 population	SDG	Easy			
Vulnerability	Social - economic	Health condition	Epidemic	Measles incidence per 1,000 population		Medium			
Vulnerability	Social - economic	Health condition	Epidemic	Tuberculosis incidence per 100,000 population	SDG				
Vulnerability	Social - economic	Health condition	Epidemic	Cholera incidence per 1,000 population					
Vulnerability	Social - economic	Health condition	Epidemic	HIV incidence per 1,000 population					

https://docs.google.com/spreadsheets/d/1rCCkpgWXVhm86m7Pdw1hnZqJtCGyG6XHzn6Iz_nDZLI/edit#gid=706729503

8. Centralize data into a shared file - Following the field mission, the Project Manager vets and centralizes all data onto a shared file for analysis. A public shared file can be created and partners invited to contribute directly to the folder. An email address should be made available in order to centralize data that comes in. In this phase, multiple in-person and remote follow-up meetings with partners may be conducted. The local process lead may have to conduct multiple follow up efforts to collect the data. Experience shows that many partners will attend the workshop but not readily share data in the follow up period. Polite persistence usually helps surface and centralize all available data. It is important to remember that INFORM is an aggregation of available data from other sources, never a primary data provider. A primary data collection process is never initiated, rather, existing datasets are centralized.

Centralize & track the data

My Drive > ... > Burundi > INFORM Burundi Data Collector

Name	Owner	Last modified	Size
Burundi Admin and Boundary files	me	10:03 AM me	—
ACLED 2012-09-01-2018-10-01-Burundi Admin 3.csv	me	10:50 AM me	2 MB
ensnmb_rapport_final_bdi_2018 SMART Survey needs data sheet.pdf	me	10:44 AM me	6 MB
Matrice Pers Besoin et Ciblees 2019 People in Need and Targeted Admin 3.xls	me	10:34 AM me	273 KB
Multi Dimens Poverty Index 2017 by Region Needs data extract.pdf	me	10:58 AM me	436 KB
Santé Compilation V20162805 Health Indicators Admin 2.xlsb	me	10:29 AM me	6 MB

9. Construct the model - The Project Manager builds the model and produces tables, and visualizations of risk. The technical process is outlined in detail in Module 3.

INFORM INDEX FOR RISK MANAGEMENT SUBNATIONAL																											
		Flood	Earthquake	Epidemic	Drought	Natural	Political violence	Human	HAZARD	Economic Growth	Education condition	Socio-Economic Vulnerability	Health Conditions	Food Security and Nutrition	Uprooted people	Recent shocks	Vulnerable Groups	VULNERABILITY	Child protection	Institutional	Communication	Physical infrastructure	Access to health service infrastructure	Infrastructure	LACK OF COPING CAPACITY	RISK	
ADMIN1	ISO-ADMIN1																										
(a-z)	(a-z)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	(0-10)	
Bubanza	BDI001	5.8	5.2	6.4	5.9	5.8	5.0	5.0	5.4	6.4	5.8	6.1	6.6	6.3	7.7	4.3	6.2	6.2	5.9	5.9	6.3	7.2	5.7	6.4	6.2	5.9	
Bujumbura Mairie	BDI017	5.6	10.0	5.4	0.0	6.7	5.0	5.0	5.9	4.6	3.0	1.5	6.0	1.5	8.5	1.1	4.3	3.0	5.4	5.4	0.7	1.3	9.1	5.3	5.4	4.6	
Bujumbura Rural	BDI002	9.5	8.1	6.2	5.9	7.8	5.0	5.0	6.6	1.7	4.7	2.8	3.2	3.7	6.9	5.4	4.8	3.9	0.6	0.6	7.5	5.4	3.0	3.7	2.3	3.9	
Bururi	BDI003	2.1	4.5	2.9	3.9	3.4	4.0	2.0	2.7	0.1	3.1	2.9	2.7	3.6	7.9	6.2	4.9	4.0	4.9	4.9	2.3	2.7	3.7	2.9	4.0	3.1	
Cankuzo	BDI004	0.5	0.0	4.1	2.0	1.8	5.0	2.5	2.2	7.8	5.4	7.5	8.0	7.2	8.7	9.1	8.3	7.9	4.2	4.2	8.2	6.0	5.9	6.7	5.6	4.6	
Cibitoke	BDI005	4.7	8.6	8.7	3.0	6.9	5.0	5.0	6.0	2.7	5.3	4.5	7.3	6.1	6.2	3.4	5.9	5.2	5.0	5.0	4.6	7.5	7.8	6.6	5.9	5.7	
Gitega	BDI006	8.6	7.5	3.6	6.9	7.0	5.0	5.0	6.1	1.8	4.8	6.8	6.5	4.4	8.8	0.5	6.1	5.9	0.4	0.4	2.9	3.1	5.9	4.0	2.4	4.4	
Karuzi	BDI007	6.8	2.3	2.3	8.8	5.8	5.0	2.5	4.3	6.2	6.5	7.4	3.6	7.6	0.0	0.9	3.0	5.6	3.0	3.0	9.2	3.9	3.1	4.3	3.7	4.5	
Kayanza	BDI008	9.0	9.2	2.3	8.0	7.9	6.0	5.5	6.9	3.9	5.6	6.6	4.0	5.2	0.0	3.4	3.2	5.1	1.2	1.2	2.6	6.1	4.3	7.4	5.0	5.6	
Kirundo	BDI009	9.9	4.0	8.2	7.0	7.9	5.0	5.0	6.7	9.4	8.0	6.7	9.0	7.6	2.8	1.6	6.3	7.4	4.6	4.6	6.1	6.7	9.5	6.4	5.0	6.3	
Makamba	BDI010	6.0	5.5	6.0	5.9	6.0	5.0	5.0	5.5	8.4	4.6	3.7	3.5	6.5	7.6	0.4	4.5	4.1	5.3	5.3	3.9	5.1	3.7	4.2	4.8	4.9	
Muramvya	BDI011	7.4	3.8	2.2	5.9	5.2	4.0	2.0	3.8	1.2	5.2	5.8	3.2	6.8	0.0	0.0	2.5	4.3	4.2	4.2	5.0	7.9	1.9	4.9	4.6	4.8	
Muyinga	BDI012	6.1	3.0	5.2	6.9	4.2	5.0	5.0	4.8	10.0	7.5	6.1	8.7	6.4	7.5	2.9	6.4	7.3	2.6	2.6	7.5	6.3	3.2	4.1	3.4	4.5	
Mwaro	BDI013	6.3	3.3	2.5	5.9	4.7	4.0	2.0	3.5	1.5	3.6	3.7	1.1	6.1	0.0	3.3	2.6	3.2	5.5	5.5	2.3	6.9	3.1	5.7	5.6	4.0	
Ngozi	BDI014	9.7	6.3	3.8	4.9	6.9	5.0	5.0	6.0	6.5	8.4	6.7	7.8	7.7	5.3	10.0	7.7	6.8	1.1	1.1	4.9	3.5	4.2	4.2	2.8	4.9	
Rutana	BDI015	4.4	2.5	4.0	4.9	4.0	4.0	2.0	3.1	8.8	5.3	5.8	5.2	6.2	5.8	10.0	6.8	6.3	4.1	4.1	5.5	5.1	2.8	4.5	4.3	4.4	
Ruyigi	BDI016	8.0	2.0	4.9	3.0	5.8	5.0	2.5	3.9	8.9	5.9	7.4	5.3	7.9	7.7	9.8	7.7	7.6	2.7	2.7	8.3	7.5	6.1	7.3	5.4	5.4	

10. Review with the core group - After completing the initial draft model, the Project Manager and the Subnational Lead present the model to a small group of data-contributing partners to gauge accuracy. The model can be shared by email and partners invited to meet and discuss the model. It is suggested that an existing working group on preparedness and risk or the Inter Agency Information Management Working Group also participate. The Project Manager and Technical Lead revises the model based on this feedback.

11. Review and validate with the full Local Partner group - The Subnational Lead presents the draft index to the full Local Partner group. The Project Manager makes changes as needed, and partners validate the model for publishing on the INFORM website. It is crucial that all partners who participated, and any other relevant partner who may not have attended the workshop, participate in the validation and review process. INFORM gains legitimacy and is unique because of the interagency consensus around the data.

12. Publish to the web - The Technical Lead validates and

INFORM SUBNATIONAL MODELS

An INFORM Subnational risk index shows a detailed picture of risk and its components within a single region or country. It uses the same methodology and development process as the global INFORM, but is subnational in resolution. Developing an INFORM Subnational model is a locally owned and managed, cost-effective process that is supported by the global INFORM initiative.

Download INFORM Subnational Brochure - (Spanish version) - (French version) - (Russian version)

Contact us for more information.



publishes the model for public use on the INFORM website - www.inform-index.org. The model is now 'live' and available for all to use with the integrated data tools from the site. Experimenting with these tools in order to help others use the model is important.

2.7 Resources and sustainability

Local partners are responsible for all direct costs associated with developing and maintaining the model. INFORM Global partners including the current Global Technical Lead, Joint Research Unit (JRC), receive donor funding to cover costs for their work as well as the maintenance of the INFORM web platforms.

The graphic below represents the costs and work days for establishing and updating an INFORM Subnational model. It is an estimation of the number of workdays, and the cost for the Project Manager. It also includes an estimated number of workdays for the Subnational Lead and Partners in order to demonstrate the resource requirement to complete an INFORM model.

This cost plan assumes that the Subnational Lead/Partners have established offices and professional networks that will facilitate the process. These costs are not included in the estimation.

Estimate of costs and work days for establishing and updating an INFORM Subnational model

	Working days to establish	Working days per update cycle	Cost Per Unit		Total Cost		Notes
			Min	Max	Min	Max	
Subnational Process Lead	30	8			Assumed part of other budgets		Consult with partners, secure additional datasets
Subnational Technical Lead	20	5			Assumed part of other budgets		Update all datasets and ensure model is correct
Translation	3	2			Variable, possibly part of other budgets		
Printing					Variable		\$1,000
Promotion	5				Assumed part of other budgets		
Admin support for Meeting	5				Assumed part of other budgets		
Admin Support for Contracts	2	1			Assumed part of other budgets		
Workshop venue and event	1		\$0	\$3,000		\$0	Depending on internal/external, number of participants.
Subnational Per Partner	2	1			Assumed part of other budgets		
Global INFORM	3				Assumed part of Global INFORM funding		
Global Technical Lead	15	2			Assumed part of JRC INFORM funding		
Project Manager	40		\$850	\$900	\$34,000	\$36,000	
Visa and travel	1		\$1,000	\$4,000	\$1,000	\$4,000	Depends on consultant and project site location
Food / accomodation	14		\$50	\$350	\$700	\$4,900	Depends on local travel / accomodation costs
Total work days to establish / update:	141	19	Total Cost Range:		\$35,700	\$48,900	

The resources can come from a single partner (possibly the Subnational Lead) or can be divided among the Subnational Partners. Funding could also be linked to coordination resources related to a specific planning initiative such as the United Nations Development Framework or Humanitarian Response Plan.

MODULE 3: Designing, building and maintaining the model

Module 3 gets technical. In this module, details of steps 5-11 outlined in Module 2 are provided. This is where we take the data that partners share, and combine it to build an INFORM Subnational Risk Index. We share the mindset, skills and specific steps required to process raw data into a complete INFORM risk model. This includes an overview of risk concept, the components of the model and the tools and templates required to finish and share the model. We'll complete this process using the exact tools and steps that you will need to complete so that the process is clear and understandable. We will work with sample data to illustrate the full process from start to finish.

This module is divided in two parts. Part I describes the process and provides useful resources provide an overview of the technical process, review key concepts and resources. Part II describes the 10-step technical process required to develop a subnational INFORM model and index.

PART I: Framework and resources

- A. Technical process overview
- B. Theoretical framework
- C. The fixed dimensions of the model
- D. Supporting tools

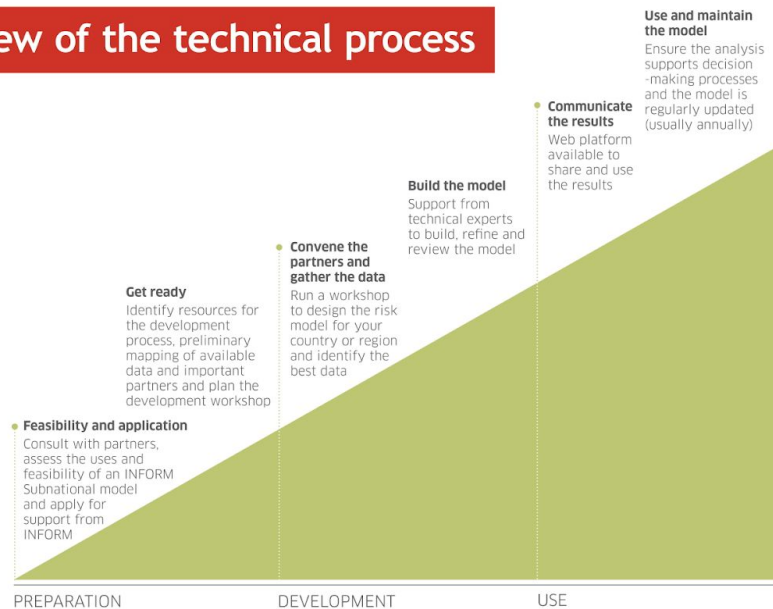
PART II. Technical process

- 1. Adapting the INFORM framework
- 2. Selecting and collecting secondary data
- 3. Data treatment
- 4. Normalisation
- 5. Aggregation
- 6. Interpreting the RISK index score
- 7. Validation - correlation matrix
- 8. Updating based on feedback
- 9. Publishing
- 10. Maintaining

PART I: Framework and resources

I.A Technical process overview

Overview of the technical process



9

The high level process outlined below serves to build a framework describing the context, find data, and combine this data into an index. Efforts are then required to review and adjust to make sure that the system works and corresponds to needs.

I.B Theoretical framework

As noted in Module 2, the development of a Theoretical Framework is the first step for completing the INFORM Risk Index. The framework provides the basis for the selection and combination of variables into meaningful composite indicators.

The INFORM Global Risk Index Theoretical Framework is the starting point, but we adapt some components to fit the subnational context.

Risk concept

The INFORM global risk index is based on risk concepts published in scientific literature. This literature has three dimensions of disaster risk. These are hazard, exposure and vulnerability. These are events that could occur and exposure to these events. Vulnerability is the susceptibility of communities to those hazards.



INFORM Risk Model

The INFORM Risk model adopts the three aspects of vulnerability reflected in the UNISDR definition. The aspects of physical exposure and physical vulnerability are integrated in the hazard & exposure dimension; the aspect of fragility of the socio-economic system becomes INFORM's vulnerability dimension; and the lack of resilience to cope and recover is treated under the lack of coping capacity dimension.

The split of vulnerability in three components is particularly useful for tracking the results of disaster reduction strategies over time. Disaster risk reduction activities are often localized and address particular community-level vulnerabilities and capacities.



The INFORM concept combines exposure & hazard, and adds a third dimension showing coping capacity, or resources available that can alleviate the impact of the other dimensions. The INFORM Risk model balances two major forces: the hazard & exposure dimension on one side, and the vulnerability and the lack of coping capacity dimensions on the other side. Hazard dependent factors are treated in the hazard & exposure dimension, while hazard independent factors are divided into two dimensions: the vulnerability dimension that considers the strength of the individuals and households relative to a crisis situation, and the lack of coping capacity dimension that considers factors of institutional strength.

More detail on the INFORM methodology is provided in the [Index for Risk Management -INFORM, Concept and Methodology](#) document on the inform-index.org site.

The United Nations and relevant scientific literature express risk using the equation:

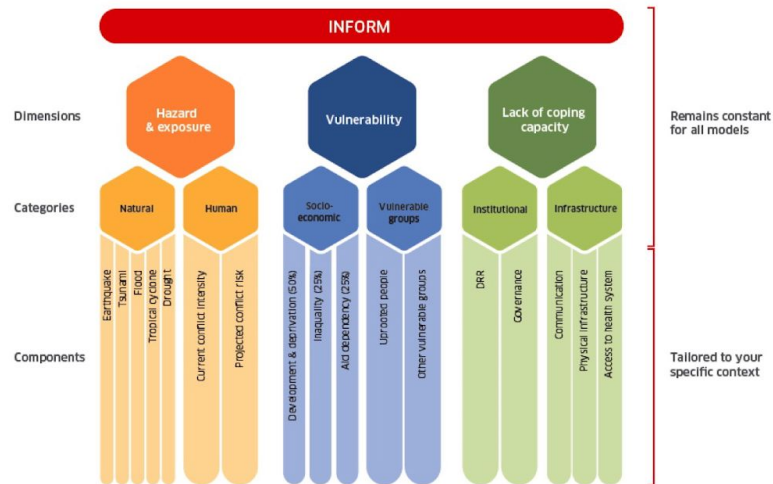
$$\text{Risk} = \text{Hazard} \times \text{Exposure} \times \text{Vulnerability}$$

In order to accommodate the INFORM Risk Index methodology, where the vulnerability variable is split among three dimensions, the equation is updated to:

$$\text{Risk} = \text{Hazard \& Exposure}^{1/3} \times \text{Vulnerability}^{1/3} \times \text{Lack of coping capacity}^{1/3}$$

In this form, INFORM's score is more susceptible to Vulnerability and Lack of Coping Capacity, the forces of risk that can be most influenced by development and disaster risk reduction activities.

INFORM Risk Index methodology



The INFORM Risk Index includes the three dimensions of risk (the top row of the picture): hazard & exposure, vulnerability and lack of coping capacity. Each dimension encompasses different categories (the second row of the picture), which are related to drivers of humanitarian crisis and disasters. Finally, there are many components within each category.

Dimensions and categories remain constant in all models, while the components within each category are tailored to the subnational context. They are carefully chosen based on partner consensus and available data during the consultation and workshop process.

Accordingly, specific risk scores of the regional INFORM Sahel model cannot be compared to the risk scores from the INFORM Lebanon Model.

Secondary data

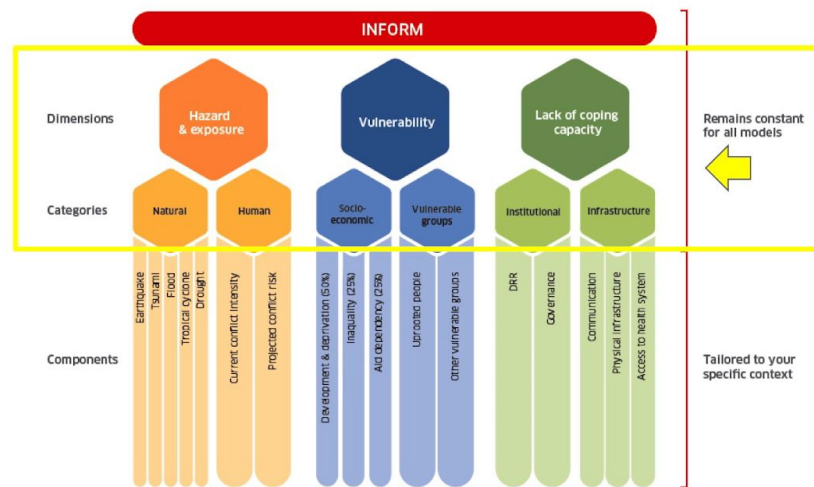
The INFORM process does not include primary data collection processes. All data for the module must come from existing, open, reliable and verifiable sources. The Subnational model is only as strong as the secondary data that feeds the calculations. Accordingly, subnational Leads must determine if there is a critical mass of suitable data before initiating the process.

Category	Component	Indicator	Year	Unit	Provider
Indicators					
Natural		Physical exposure to earthquake MMI VIII	1997	Average annual population exposed per country	GSNAP
Natural		Physical exposure to Flood	2015	Average annual population exposed per country	UNISDR, Global Risk Assessment 2015
Natural		Physical exposure to Tsunami	2015	Average annual population exposed per country	UNISDR, Global Risk Assessment 2015
Natural		Physical exposure to Cyclone SS1	2015	Average annual population exposed per country	UNISDR, Global Risk Assessment 2015
Natural		Physical exposure to Cyclone SS3	2015	Average annual population exposed per country	UNISDR, Global Risk Assessment 2015
Natural	Tropical Cyclone	Physical exposure to Cyclone Surge	2015	Average annual population exposed per country	UNISDR, Global Risk Assessment 2015
Natural	Tropical Cyclone	Total affected by Drought	1989-2014	Average annual population affected per country	EM-DAT, CRED
Natural	Drought	Frequency of drought events	1989-2014	Average annual events per country	EM-DAT, CRED
Natural	Drought	Agriculture drought probability	1983-2013	Average annual events per country	ISIS, FAO
Human	Current Conflicts Intensity	Current High Violent Conflict Intensity Score	2014	Index	Conflict Barometer, Heidelberg Institute
Human	Projected Conflict Risk	GCR Internal Conflict Score	2015	Index	JRC
Social-economic vulnerability	Poverty & Development	Human Development Index	2013	Index	UNDP, Human Development Report
Social-economic vulnerability	Poverty & Development	Multidimensional Poverty Index	2012	Index	UNDP, Human Development Report
Social-economic vulnerability	Inequality	Gender Inequality Index	2013	Index	UNDP, Human Development Report
Social-economic vulnerability	Inequality	Income Gini coefficient	2003-2013	Index	World Bank
Social-economic vulnerability	Economical Dependency	Humanitarian Aid (FTS)	2012-2014	USD	OCHA, FTS
Social-economic vulnerability	Economical Dependency	Development Aid (ODA)	2011-2012	USD Million	OECD, DAC
Social-economic vulnerability	Economical Dependency	Net ODA received (% of GNI)	2012	% of GNI	World Bank
Vulnerable groups	Uprooted people	Refugees by country of asylum	2015	Number	UNHCR
Vulnerable groups	Uprooted people	Internally displaced persons (IDPs)	2015	Number	Internal Displacement Monitoring Centre
Vulnerable groups	Uprooted people	Returned Refugees	2014	Number	UNHCR
Vulnerable groups	Other Vulnerable Groups	Tuberculosis prevalence	2012	per 100,000 people	WHO, Global Health Observatory Data Repository
Vulnerable groups	Other Vulnerable Groups	Estimated number of people living with HIV - Adult (>15) rate	2012	%	WHO, Global Health Observatory Data Repository
Vulnerable groups	Other Vulnerable Groups	Malaria death rate	2012	per 100,000 people	WHO, Global Health Observatory Data Repository
Vulnerable groups	Other Vulnerable Groups	Mortality rate, under-5	2013	per 1,000 live births	UNICEF
Vulnerable groups	Other Vulnerable Groups	US Under weight	2012	%	UNICEF
Vulnerable groups	Other Vulnerable Groups	People affected by Natural Disasters	2013-2015	Number	EM-DAT, CRED
Vulnerable groups	Other Vulnerable Groups	Average Dietary Energy Supply Adequacy	2014-2016	%	FAO
Vulnerable groups	Other Vulnerable Groups	Prevalence of Undernourishment	2014-2016	%	FAO
Vulnerable groups	Other Vulnerable Groups	Domestic Food Price Level Index	2014	Index	FAO
Vulnerable groups	Other Vulnerable Groups	Domestic Food Price Volatility Index	2014	Index	FAO
Institutional	Governance	Government Effectiveness	2013	Index	World Bank, Worldwide Governance Indicators
Institutional	Governance	Corruption Perception Index	2014	Index	Transparency International
Institutional	DRR Implementation	HFA Scores Last recent	2007-2015	Index	ISDR
Infrastructure	Communication	Adult literacy rate	2005-2013	%	UNESCO
Infrastructure	Communication	Access to electricity	2012	%	World Bank
Infrastructure	Communication	Internet users	2014	%	World Bank
Infrastructure	Communication	Mobile cellular subscriptions	2014	per 100 people	World Bank
Infrastructure	Physical Connectivity	Improved sanitation facilities (% of population with access)	2015	%	World Bank

Indicators are datasets that capture a specific topic, for example exposure to floods, or gender inequality. Partners choose Indicators for each component. These indicators are the individual datasets that make up the INFORM Risk models. They may include, for example, the number of people exposed to earthquakes of a certain magnitude, the number of displaced persons or food security indicators at the sub-national level. Indicators may be composite indices themselves. In all cases, indicators must be chosen if they are open source and continuous, provide consistent full coverage and be available at the local level.

A composite indicators is typically a compromise between a data driven and a user driven model. There are always some components which existing data cannot describe, especially if the demands for quality of data are very high.

I.C The fixed dimensions of the model

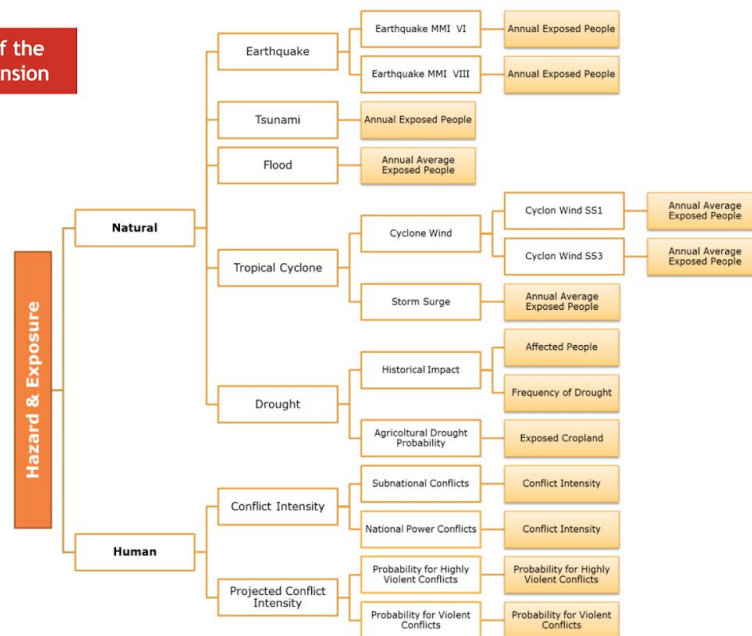


Let's examine the fixed dimensions in detail. A solid understanding is essential for selecting the right components.

Hazard & Exposure

The INFORM index shows risk to people. The hazard & exposure dimension reflects the probability of human physical exposure associated with specific hazards. There is no risk if there is no physical exposure, no matter how severe the hazard event is. Therefore, the hazard and exposure dimensions are merged into hazard & exposure dimension. It represents the load that the community has to deal with when exposed to a hazard event. The dimension comprises two categories: natural hazards and human-induced hazards. These are aggregated with the geometric mean, where both indexes carry equal weight within the dimension.

Graphical presentation of the Hazard & Exposure dimension

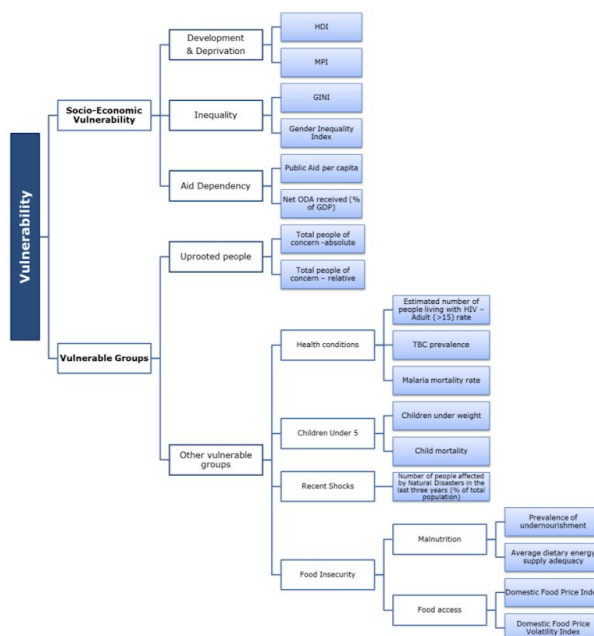


Vulnerability

The impact of disasters on people in terms of the number of people killed, injured, and made homeless is predominantly felt in lower income countries while the economic costs of disasters are concentrated in high income countries. The Vulnerability dimension addresses the intrinsic predispositions of an exposed population to be affected, or to be susceptible to the damaging effects of a hazard. The assessment is made through hazard independent indicators. That is, the vulnerability dimension represents economic, political and social characteristics of the community that can be destabilized in case of a hazard event.

Socio-economic vulnerability and vulnerable groups are aggregated through the geometric average. The indicators used in each category are different in terms of time variability and the social groups considered in each category are the target of different organizations and parts of the national ministries. If the first category refers more to the demography of a country in general, the vulnerable group category captures social groups with limited access to social and health care systems.

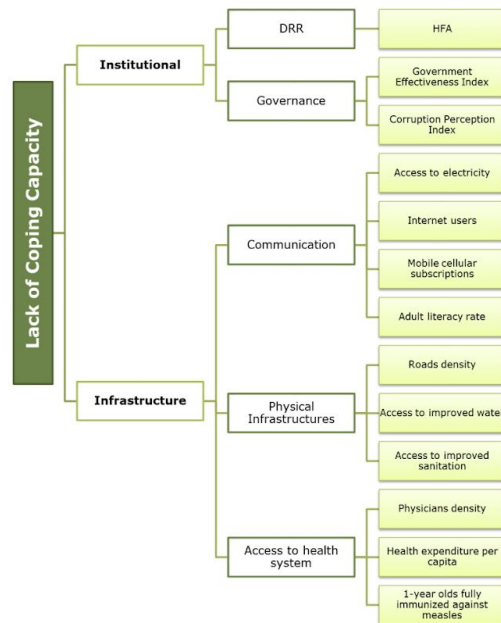
Graphical presentation of the vulnerability dimension



Lack of Coping Capacity

For the coping capacity dimension, the question boils down to which issues the government has addressed to increase the resilience of society and how successful that has been. Specifically, we measure the ability of a country to cope with disasters in terms of formal, organized activities and country government effort as well as the infrastructure which contribute to the reduction of disaster risk. This dimension aggregated by a geometric mean of two categories: institutional and infrastructure. The difference between the categories is in the stages of the disaster management cycle on which they focus. The institutional category covers the existence of DRR programmes which address mostly mitigation and preparedness/early warning phase, the infrastructure category measures the capacity for emergency response and recovery.

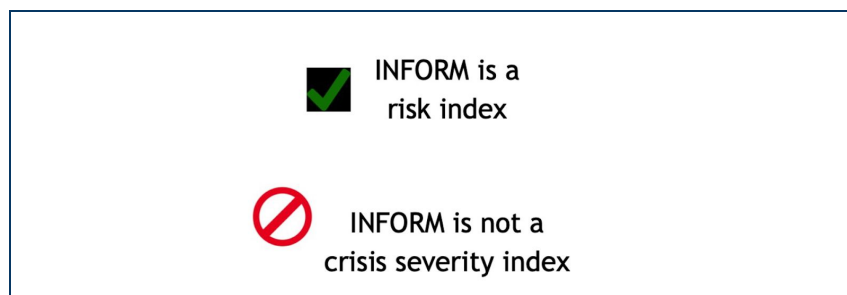
Graphical presentation of the
Lack of Coping Capacity dimension



Risk vs. severity

Partners learning about INFORM Risk Index for the first time often confuse risk and severity. Humanitarian organizations working on saving lives in a disaster often want to know how many people have been affected by the disaster and what these people need to survive in the short term; they want to know the severity of the crisis.

Risk is the combination of the probability of an event and its negative consequences. Disaster risk is not just about likelihood and severity of the hazard event, but also about what is exposed to that hazard and how vulnerable that exposure is.


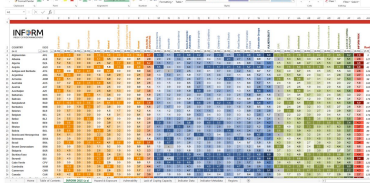





Humanitarian focused colleagues need to be reminded that the INFORM Risk Index is not a crisis severity index. This is not simply: “look at the map and send your aid there”. This is a holistic picture of risk that includes data over several years. However, if a crisis hit an area that was deemed ‘high risk’ in the INFORM model, humanitarians could use assessment as one input in their estimation of a disaster’s severity.

Over the last two years, INFORM partners have been working to develop a Global Crisis Severity Index (GCSI). The GCSI will be published in beta version during 2019. For more details go to the INFORM website: <http://www.inform-index.org>

I.D Supporting tools

The Project Manager and Subnational Lead use the following tools to build and maintain the INFORM Subnational Risk model:

	<p>Project Management Tool - Used by all for planning and implementing the build phase. Adapt this for the specific project phases and needs.</p>
	<p>INFORM Subnational Risk Index spreadsheet template - an empty Excel template with the formula for normalization and aggregation.</p>
	<p>Data Checklist - This spreadsheet shows the INFORM Global</p>
	<p>Workshop Agenda Template - Sample agenda and sessions for the workshop where Subnational Partners reach consensus on the components for the model.</p>
	<p>Workshop Presentations - The Project Manager builds the specific workshop presentations based on this template.</p>

PART II - Technical process

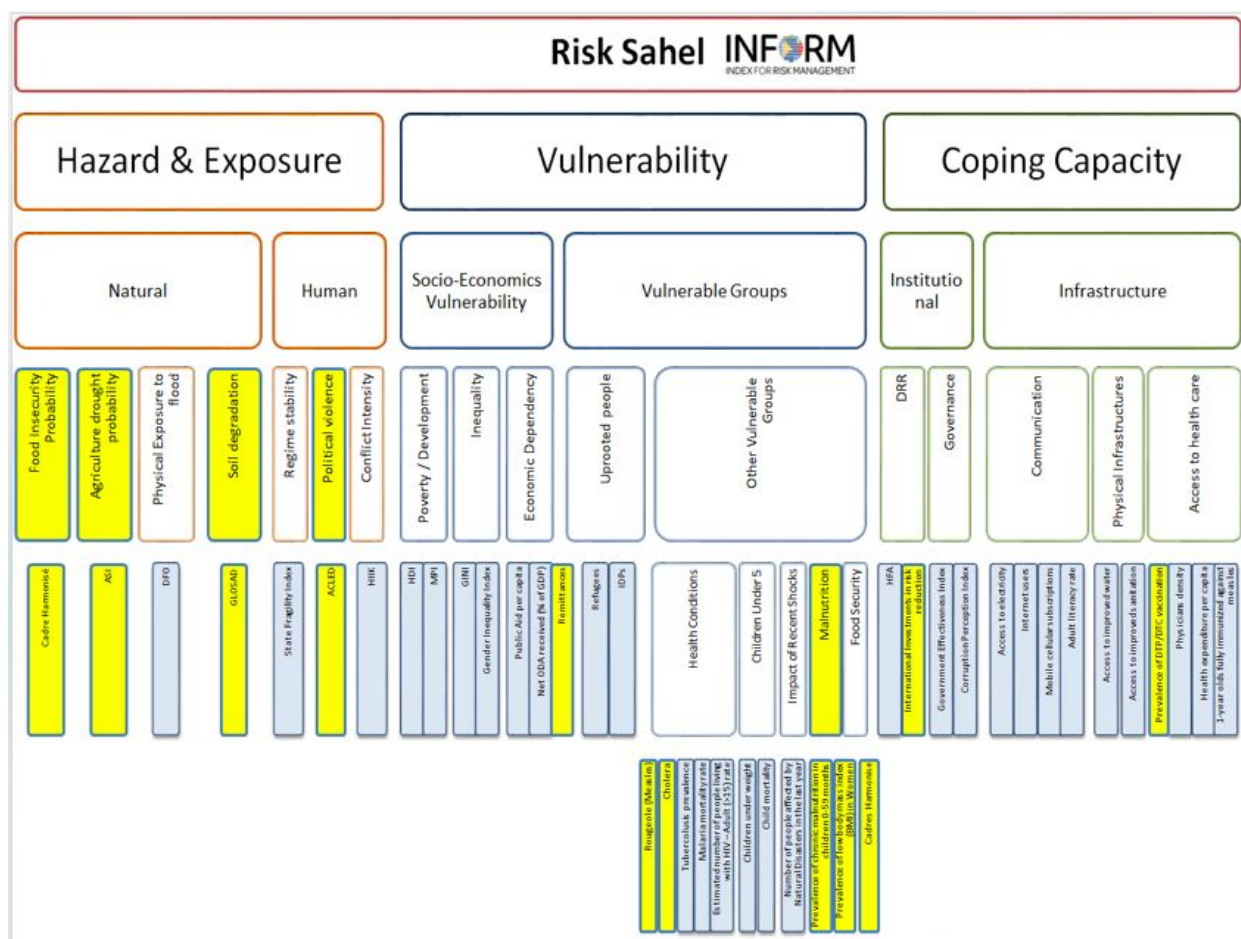
The technical process that the Project Manager and Technical Lead use to complete each subnational model is reviewed in Part II. This is the most complex part of the training.

II.1 Adapting the INFORM Framework

At the open workshop described in Module 2 section 6, the Project Manager, in partnership with Subnational Lead and Partners, reach a consensus on the specific components of risk. Hand-drawn inputs and discussion notes from the workshop are reviewed to build a conceptual model that is tailored to the context.

The picture below reflects the results after the first INFORM workshop in Dakar which covered the whole Sahel region.

1. Adapting the INFORM framework
2. Selecting and collecting secondary data
 - 2.1. Ensure/create admin-code correspondence
 - 2.2. Clean and validate
3. Data treatment
 - 3.1. Imputation of missing values
 - 3.2. Adjustment in a non-dimensional scale
 - 3.3. Transformations
 - 3.4. Identification of outliers
4. Normalisation
5. Aggregation
6. Interpreting the RISK index score
7. Validation - correlation matrix
8. Updating based on feedback
9. Publishing
10. Maintaining



The boxes with no fill and blue fill illustrate the existing global datasets that partners validated. The new components that partners proposed are in the yellow fill in the three bottom rows. The components and subcomponents roll up' into the model.

II.2 Selecting and collecting secondary data

The theoretical framework provides the basis for indicator selection. Exchanges during the open workshop provide an indication of the available indicators to be considered for the model.

Indicators should measure the component's underlying concept and be:

- **Relevant:** Justification is based on evidence or the existing literature (Was the data collected for a similar purpose? Was it collected for another purpose but is relevant?)
- **Representative and robust:** Focused on the component to be described, proportionally responsive to the changes, they should avoid broad measures (e.g., GDP/capita)
- **Quantitative:** Measurable
- **Reliable:** (including metadata) and open-source
- **Continuous, consistent, with coverage in the full area** of the subnational model

Questions need to be answered, including, What is development? How do we measure it? In most cases, a single indicator that can be used to describe the component does not exist. Indicators that answer the question need to be found. Most of the time, the strength in one indicator can compensate weakness in another.

Ensure/create admin-code correspondence

The Technical Lead matches, and in some cases creates, unique administrative codes (admin-codes) to ensure that all datasets are comparable. Official admin-code for sub-national units do not exist. But codes used for specific purpose may exist, such as census and election. However, these subdivisions may not necessarily match or align with administrative boundaries.

An example of admin-codes is the p-code which is widely used by UN organisations. (<https://www.humanitarianresponse.info/en/applications/tools/category/implementing-p-codes>)

The process that involves matching up subnational entities that may not directly match can be messy. As an example, in the Niger national INFORM process, the Admin 3 boundaries changed while the team was constructing the model, and some of the data had to be recalculated based on the new designations.

Once admin-codes have been determined, the Technical Lead copies them, together with the names of the units, into the [INFORM Excel template](#) in the first two columns of the 'Indicator data' sheet.

Example [video 1: c&p of admin-code and names in the Excel - "Sample1_Unit-data.xlsx"]

- Open the "Sample1_Unit-data.xlsx", copy the data (admin-code and names)
- Open the INFORM template,
- Select the place names and admin units.
- Go to the tab "Indicator data" and paste the data in the columns A and B

Clean and validate

The Technical Lead cleans, validates and checks the source of the data to ensure integrity, as well as completes the full metadata for each dataset.

Example [video 2: real data input with only admin names and data, add column, use VLOOKUP formula to match names with the p-codes in the Excel - "Sample2.1_Input-data-real-example.xlsx"]

- Open the "Sample2.1_Input-data-real-example.xlsx", and the Excel template
- Add a column after the "Province" column and named it "admin-code"
- Apply the formula VLOOKUP to the created column:
"=VLOOKUP(B4,['INFORM_SubnationalRI_Template_v3.xlsx]Indicator Data'!\$A\$14:\$B\$30,2,FALSE)"
- Drag the formula down to all the cells
- Show that 3 province names don't match: manually do the matching and assign the right code to the right province
 - Consolidate all data into a unique dataset.
 - Here is a trick to easily bring in data using the admin code that we identified in the first video clip.
 - This is how we consistently match the dataset when each dataset is out of order with our admin codes.
 - This makes it so you don't have to manually paste or sort each dataset.

- Use the vlookup function
- Go to the admin tab, and select the column with name and p code,
- Select the second column
- Select false because we want to preserve correct and precise matching.
- We have to fix the column with dollar sign to keep the range fixed.
- After we do that we can drag down the formula to all provinces.
- Most provinces will have an exact match.
- We will then need to manually fix any processes that did not work with the pcode key.

II.3 Data treatment

Before raw data is placed into the model, they sometimes need to be pre-processed. Pre-processing may include imputation of missing values, adjustment into non-dimensional scales, transformation or identification and treatment of outliers, as described below.

Imputation of missing values

The goal is to have a value for each component of the model. If data for some units are not available for a given year, a systematic imputation of missing values using the data from the most recent year available in a 5-year span may be necessary. An example is provided below:

Year	2014	2015	2016	2017	2018	Most recent
Indicator 1	2.5	2.7	-	2.8	-	2.8
Indicator 2	95.34	-	-	-	-	95.34

Other imputation methods, such as interpolation, regression or more advanced statistical methods can be used to impute missing values. At the end of the imputation, the missing values for each raw indicator should amount to less than 10% of the total values.

In a composite indicators exercise, it is not necessary to impute the missing values since the methodology can handle data gaps. They can be ignored, and the average index of the remaining indicators within the same component can be used. Ignoring is like imputing the missing value with the mean of the values observed for that unit on the other variables. In the case of missing data due to weak coverage, the approach is to introduce more than one indicator for the same component to achieve complementarity, as follows:

Unit	Indicator A1	Indicator A2	Indicator A3	Component A
Unit A	8.3	-	7.5	7.9
Unit B	8.3	7.9	7.5	7.9

At the end of imputation process, the Technical Lead copies the imputed data in the 'Indicator data' sheet of the [INFORM Excel template](#).

Example [video 3: c&p of the data in the Excel 'data input' tab - "Sample2.2_Input-data-all.xlsx"]

- Open the "Sample2.2_Input-data-all.xlsx"
- Start copying the indicator names in the first row. Make sure to respect the logic order of the analytical framework: Hazard&Exposure, Vulnerability, Capacity
- Open the INFORM template, go to the tab "Indicator data" and paste the indicators names in the row 2
- If in the template the number of the columns for each dimensions are not enough, add the needed columns after the last column of the dimension.
- If the columns are too many, delete the needed columns at the end of the dimensions
- Copy the data from the "Sample2.2_Input-data-all.xlsx", and paste them in the "Indicator data" tab
- Missing values should not be left blanks, they should appear as "no data"

Adjustment in a non-dimensional scale

This involves utilizing percentages, per capita or density functions. In order to increase comparability across units, we should avoid absolute numbers, and rather show how these numbers relate back to people. This can be handled at the level of the selection of the indicators (i.e. using GDP per capita instead of the total GDP), or later with data processing (i.e. dividing the number of people affected by natural disasters for each unit by the total population of the unit).

Transformations

Transformations are applied when raw data are far from the normal distribution. A log transformation is used to reduce the positive skewness of data, while an exponential transformation is used to reduce the negative skewness of the data.

A simple way to check if the indicator needs to be transformed is to create a bar chart with the ordered data, and look at the distribution: if the curve formed by the bars is lower than the line, a concave down functional form is applied (e.g. log or the nth root); If it is higher, a concave up form is applied (e.g. exponential or power).

Example [video 4: distribution chart in the Excel - example with "Physical exposure to flood"]

- Go to the "Indicator data" tab, select and copy the data from the "Physical exposure to flood" (column C)
- Move to the "Distribution charts" tab, paste the data in the yellow cells, and type the indicator name in the first cell
- Select the data, and order them using the tool "Sort Largest to Smallest"
- Move the trend orange line joining the largest and the smallest value in the chart
- Show that the bars are not along the line, and say that a log transformation is needed in order to better distribute the data (otherwise the normalisation will produce very high score scores and very low scores, without a intermediate ones)
- In the cell B3, type: "LOG(A3)" and drag the formula down applying it to all the data

- Select one bar of the chart, (you see that the chart data are highlighted) move the box to the "LOG" column

Outliers identification and treatment

An outlier is a data point that is distinctly separate from the rest of the data. There are many techniques to identify outliers, but in INFORM risk index a combination of the following is used:

- **Existing standard limit values** - Whether a recognised standard for interpreting the data exists should be investigated. For instance, if the indicator is used in other contexts by national institutions or international frameworks.
- **Skewness and kurtosis**

(Example [video 5: show the "indicator data" with the Skewness and Kurtosis values in the Excel])

- Go to the "Indicator data" tab and show the indicators with both skewness >2 and kurtosis >3.5.
- This is valid for indicators with normal distribution. Some indicators contains lot of zeros, and it is normal that doesn't match the criteria.
- Check the min and max values for which skewness is lower than 2 AND kurtosis is lower than 3.5. Skewness and kurtosis are calculated iteratively for the whole dataset without the obvious outliers, until pre-set conditions are met.
- Look at the data distribution

(Example [video 6: distribution chart in the Excel - ""])

- Go to the "Indicator data" tab, select and copy the data from the "Monetary poverty" (column M)
- Move to the "Distribution charts" tab, paste the data in the yellow cells, and type the indicator name in the first cell
- Select the data, and order them using the tool "Sort Largest to Smallest"
- Move the trend orange line joining the largest and the smallest value in the chart: the bars are not aligned along the line
- Move the line up from the right edge up to the Y value 40. Show that now the bars are aligned
- Set the MIN=40 and MAX=85
- Say that then the value 20.5 is an outlier. This means that it will get 0 score in the normalisation.
- Order the indicator data from the higher to the lower and then create a bar-chart. Ideally the bars should be distributed along a line. Use the intercepts of this line on the vertical axis for identify the cut-off values.

II.4 Normalisation

Normalisation brings indicators onto a common scale, rendering the indicators comparable. This involves:

- Making directional adjustment, so that higher values correspond to worst performance in all indicators.
- Selecting a suitable normalisation method (e.g., min-max, thresholds) according the conceptual framework and the data properties.

The Technical Lead processes and interprets each dataset to ensure comparability. Specifically, he or she processes the datasets into a scale from 0 (lowest risk) to 10 (highest risk) for each dataset and region/subregion of the model.

As a rule of thumb, the normalisation process aims to obtain a normal distribution of the normalised indicators, with 10 as maximum, 0 as minimum and both the median and the mean of 5. The average of 5 means that it avoids introducing aggregation distortions stemming from differences in indicators means.

INFORM models systematically uses the min-max linear normalisation method, with some exceptions related to the nature of the indicators. For example, the thresholds method can be used for ordinal data where the scale is not linear (i.e. Conflict Barometer data intensity scale from 1 (dispute) to 5 (war) is not linear, and therefore is normalised giving higher values (8,10) to the higher classes (4, 5)).

As outliers often cause min and max values to be very different from the bulk of the values in the dataset, rescaling with predefined min and max values is applied, as specified in the equation below.

$$x_{i, norm}^j = \frac{x_i^j - x_{i, min}}{x_{i, max} - x_{i, min}} \times 10$$

x_i^j – data point for the j – th unit from i – th indicator 's dataset

$x_{i, min}$ – predefined min value for i – th indicator 's dataset

$x_{i, max}$ – predefined max value for i – th indicator 's dataset

$x_{i, norm}^j$ – normalized data point or the j – th unit from i – th indicator 's dataset

The choice of trimming the tails of the indicators' distributions is supported by the need to avoid having extreme values overly dominate the result. The minimum and maximum data point of the remaining dataset after the exclusion of the outliers, are taken as min and max.

Fixed min and max values for each indicator dataset are preferred in order to:

- Preserve the rescaling factor and make the transformation stable through the time series,
- Exclude the distortion effect of outliers on indicator's set,
- Consider the nature of the topic reflected which pre defines the reasonable min and max values (e.g., expert opinion).

Example [video 7.2: insert MIN and MAX in the Dimensions tabs]

- Go in the 'Framework' tab
- Scroll down, and start filling the indicators section with names, normalisation method, min, max
- In the 'INFORM_SubnationalRI_Template_v3_video-8' start from 'indicator data' and select the 'Monetary poverty' as example
- Look to the 'Framework' tab in order to see that they belong to the same component and which normalisation method is assigned, and the min, max
- Go to the 'Vulnerability' tab, identify the right formula to use from the examples (column C)
- Check if the formula points to the right data
- Copy the MIN and MAX values from the 'Framework' tab, and paste them in the column C of the 'Vulnerability' tab
- Show the normalised data
- Go to the 'Framework' tab to look to the next indicator ('Non-monetary Poverty'): the normalisation method is again MIN-MAX
- Go to the 'Vulnerability' and copy the formula from the column C (MIN-MAX formula)

- Copy the MIN and MAX values from the 'Framework' tab', and paste them in the column C of the 'Vulnerability' tab
- Show the normalised data

The minimum and maximum values will be re-evaluate periodically, for example every five years.

II.5 Aggregation

Different aggregation rules are possible. Which one to choose depends on the methodology, which defines how the information from indicators should contribute to the composite indicator. Aggregation rules can be defined using mathematical operations such as:

- Minimum: the best indicator only
- Maximum: the worst indicator only
- Arithmetic average
- (Inverted) Geometric average³

The INFORM risk index methodology implements the arithmetic and (inverted) geometric average. Aggregation rules are applied to indexes at each level in order to progress through the levels in a hierarchical bottom-up way, i.e. starting at component level and going one by one through the category level, to the dimension level. The dimensions are calculated by the geometric mean of the respective categories. The final score of the INFORM risk index is calculated with the risk equation (Risk = Hazard & Exposure $1/3 \times$ Vulnerability $1/3 \times$ Lack of coping capacity $1/3$).

In arithmetic and geometric aggregations, weighting can be applied to control the contribution of each indicator to the overall composite and should be justified by the theoretical framework. Practically, weights express a desired trade-off between indicators.

³ The geometric average is always smaller or equal than the arithmetic average. To use that characteristic of geometric average, i.e. to reward more those countries with high scores, the following procedure is applied:

1. Inversion of index following the notion higher the better.
2. Rescaling of index into the range [1,10].
3. Calculation of geometric average.
4. Rescaling the score back into the range [0,10].
5. Inversion of the score with the notion that higher is worse.

Perfect substitutability:
Arithmetic mean

perfect substitutability means that it is possible to offset a low performance in one dimension with a good performance in any other dimension

Partial substitutability:
Geometric mean

Imperfect substitutability means that the less you have of something, the more you will benefit from improvements in that dimension.

Full Compensation

Partial Compensation

	Natural Hazard	Human Hazard	Hazard & Exposure	
			Arithmetic Average	Geometric Average
Ethiopia	5.4	6.7	6.0	6.1
Nigeria	2.4	9.6	6.0	7.3



The table shows an example of the differences between the two methods: with the arithmetic mean, aggregating two similar scores (Ethiopia) or two very different ones (Nigeria), gives the same results, while with the (inverted) geometric mean, the latter got an higher results towards the higher score.

Arithmetic mean and geometric mean methods are applied according to their characteristics:

- Arithmetic mean allows perfect substitutability. This means that it is possible to offset a low performance in one dimension with a good performance in any other dimension.
- (Inverted) geometric mean allows partial substitutability. This means that the more you have of one dimension, the more it will be the contribution to the risk from that component.

The arithmetic mean is used if you want to aggregate dimensions with similar properties, when the full compensation is welcome (i.e. 'internet users' and 'mobile subscriptions' are both indicators that describe the "access to technological infrastructures"). The Geometric Mean is useful when we need to compare dimensions with very different properties. (i.e. earthquake, flood and tropical cyclone exposure are conceptually aggregable as natural hazards, but they are very different in characteristics).

In general, arithmetic mean is used for aggregating the base indicators and the lower level of the model, while geometric mean is applied to the higher level of the model.

Example [video 8: select one aggregation method and calculate the component]

- Go in the 'Framework' tab
- Scroll down, and start filling the Components (according to the Analytical Framework')
- Show the completed filled 'Framework' from the 'INFORM_SubnationalRI_Template_v3_video-7'
- In the 'INFORM_SubnationalRI_Template_v3_video-8' go to the 'Vulnerability' and show the first 3 indicators
- Then move to the 'Framework' tab, and show that they are aggregated to the "Economic Growth" component using the 'arithmetic average'
- Come back to the 'Vulnerability' tab and apply the formula

- In the 'INFORM_SubnationalRI_Template_v3_video-8' go to the 'Hazard&Exposure' and show the columns E to H
- Then move to the 'Framework' tab, and show that they are aggregated to the "Physical exposure to Epidemic" component using the '(inverted) geometric average'
- Come back to the 'Hazard&Exposure' tab and apply the formula

Example [video 8.1: show the final]

- In the 'INFORM_SubnationalRI_Template_v3_video-8', show how to link the completed components in the result tab (point to the right column in the calculation tabs)
- Move to the INFORM Burundi to show all the model completed

II.6 Interpreting the risk index scores

The INFORM Risk index is scored between 0.0 and 10.0. The low values of the index represent a positive performance in terms of managing humanitarian risk, and the high values of the index represent a negative performance. The notion that higher is the worse is consistently applied also at dimension, category and component level.

For a better perception of risk, the units are categorised into different clusters based on their score/scores. The scope of the fixed threshold obtained from the clustering analysis is: more meaningful trend analysis, more solid perception of risk classes among users. The classes are defined for the Risk, dimensions and categories. The classes should be used in all the communication material, in the Excel, in the maps, etc.

A script in R (<https://cran.rstudio.com/>) that helps to perform the cluster analysis is provided as part of the training material.

Example [video 9: show how the R script works]:

https://drive.google.com/file/d/1O0m5KAB1Cm_WiMEyNVqZp4TbCFJPRAYf/view?usp=sharing

- Install the R software
- Prepare the data (basedata_330.csv)
- Load the script (cluster_analysis.R)
- Show all the steps
- Move to the INFORM Burundi, and show how to apply the classes in the result tab

II.7 Validation - correlation matrix

Once the Technical Lead has completed the first version of the model, he or she should assess its statistical coherence. A cross-correlation matrix helps retrieve useful information in the model.

Statistical coherence

check the significance level of correlation coefficients and the sign of the correlation coefficients

Cross-correlation matrix

- **Avoid negative** correlations (conflicting issues)
- **Avoid weak** correlations (independent issues)
- **Avoid strong** correlations (double counting)
- Check the **balancing** within the Index/components

	2.1.1.1 Índice de Desarrollo Humano	2.1.1.2 Condiciones de Vida - Vivienda	2.1.1.3 Población rural en Guatemala	2.1.1.4 Desarrollo y Población	2.1.1.5 Alimento de Población	2.1.1.6 Consumo de Agua	2.1.1.7 Calidad de la Alimentación	2.1.1.8 Desigualdad	2.1.1.9 Tasa de Dependencia General	2.1.1.10 Población en Dependencia	2.1.1.11 Crecimiento Económico	2.1.1.12 Desarrollo Económico
2.1.1.1 Índice de Desarrollo Humano	1.00	-0.08	0.08	0.52	0.05	-0.09	0.07	0.03	0.00	0.00	0.00	0.00
2.1.1.2 Condiciones de Vida - Vivienda	-0.08	1.00	0.19	0.19	0.17	0.13	-0.03	0.12	0.03	0.03	0.18	0.16
2.1.1.3 Población rural en Guatemala	0.08	0.19	1.00	0.78	0.47	-0.46	0.36	0.39	0.55	0.55	0.06	0.06
2.1.1.4 Desarrollo y Población	0.52	0.19	0.78	1.00	0.39	-0.21	0.29	0.39	0.36	0.36	0.06	0.06
2.1.1.5 Alimento de Población	0.05	0.17	0.47	0.39	1.00	-0.18	0.22	0.04	0.30	0.30	0.30	0.30
2.1.1.6 Consumo de Agua	-0.09	0.13	-0.46	-0.21	-0.18	1.00	-0.13	0.14	-0.13	-0.13	-0.39	-0.39
2.1.1.7 Calidad de la Alimentación	0.07	-0.03	0.36	0.29	0.22	-0.13	1.00	0.14	0.41	0.41	0.46	0.46
2.1.1.8 Desigualdad	0.03	0.12	0.39	0.39	0.04	0.14	0.14	1.00	0.28	0.28	0.28	0.28
2.1.1.9 Tasa de Dependencia General	0.00	0.03	0.55	0.36	0.30	-0.13	0.41	0.28	1.00	1.00	0.02	0.02
2.1.1.10 Población en Dependencia	0.00	0.03	0.55	0.36	0.30	-0.13	0.41	0.28	1.00	1.00	0.02	0.02
2.1.1.11 Crecimiento Económico	0.00	0.18	0.06	0.06	0.30	-0.39	0.46	0.28	0.02	0.02	1.00	1.00
2.1.1.12 Desarrollo Económico	0.00	0.16	0.06	0.06	0.30	-0.39	0.46	0.28	0.02	0.02	1.00	1.00
INFORM Sodio Económico	0.28	0.28	0.69	0.69	0.55	0.01	0.52	0.40	0.96	0.96	0.71	0.71

A variable should be more correlated to its own dimension than to other dimensions

INFORM
INDEX FOR RISK MANAGEMENT

II.8 Updating based on feedback

The Technical Lead updates the model based on feedback from the core group, then from the full partner group.

II.9 Publishing

The Technical Lead publishes the approved model on the INFORM web platform for public use.

II.10 Maintaining

To maintain the INFORM model, an update frequency is decided (usually 6 or 12 months). The process described above is followed once more, replacing the older data with new data and recalculating the scores.

MODULE 4: Communicating and promoting the model

Have you ever built something and no one ever used it? Doing good work is only half of the job. The other half is making sure that people know about the work and understand how it can save time and improve work in service of crisis affected people.

Module 4 discusses how to promote and communicate about the model. INFORM partners must advocate with the humanitarian, development communities and governments to demonstrate the benefits of the model and ensure that all partners understand the process and opportunity that INFORM provides.

In this section we will learn how to promote the model and make sure the work is integrated into ongoing programming that helps crisis- affected people.

4.1 A 'perennial' INFORM model

The aim is to build a perennial model. The author Ryan Holiday defined the concept of a perennial product as a creation that finds continued success and more users over time. A perennial resource is one that we return to more than once, that we recommend to others and that increases in value over time.

The model brings together partners in a collective process to assess risk and support decision-making that will help people plan for and thrive in disasters and instability. The global INFORM team aims to make collective risk analysis a perennial, easy and standard part of humanitarian, development and governance work.

How can a risk model stand the test of time? The first sections of the guidance discussed how to build a coalition around INFORM, find the data, and build a model. Once the model is built and ready, others need to know about it and its value communicated.

4.2 Communications mindset

The mindset around communicating the INFORM model is crucial. We must understand and value the model, make sure it is a good fit for our work and location, and understand the approach and its potential impact; only then can we communicate this message to others. As the first step to effective communication, one needs to think about one's connection to the process and consider how to connect with the model in order to communicate with others about it.



The model can be looked at different ways with a communication mindset, for example:

- INFORM is the only open source collective risk assessment model that exists today. It is a unique approach that is a step towards more sophisticated analysis and programming that help people in our complex and dynamic world.
- In an age of inter-agency and governmental competition, INFORM offers a neutral platform to collectively define an evidence base around hazards, weaknesses and strengths so we can make clear decisions on how to best help people survive and thrive.
- Many organizations and governments are criticized over a lack of rigour, consistency or delivery. INFORM is an example of getting organized, working with others and truly understanding a situation. We can create the right action based on a profound and evidence based understanding of our world.
- The model is not perfect, but we have to take the first steps down the road to a nuanced risk-informed approach that will enhance our systems over time.

4.3 Building a communications plan

The next step is to build a communications plan. If available, the communications team from your organization or government can help to develop an approach. This can be a simple one-page document that helps guide work to get the right organizations to learn about and use INFORM.

A simple communications plan has the following elements:

Objectives - What is the objective? Here is an example: I want to integrate the INFORM model into national and subnational planning processes and have partners use and value the product, contributing over time to its continued use and improvement.

Audience - Define the audience. They are the key partners who participated in the INFORM workshop, as well as a wider group of organizations, civil society groups, academics and government entities. The model can also be made available to people and communities who use programs that organizations deliver.

Key Messages - Define a set of key messages around the INFORM model. Let people know how it was created, in collaboration with whom. Talk about its benefits and what it can do for a partner specifically.

Key communications products - The specific products that will be created.

Next steps - Approving and using the plan can entail the local INFORM subnational steering group approving the model or creating a timeline with deliverables.

4.4 Means of communication

There are several means to communicate about the model:

Normal workflow- This involves referring to the model in normal coordination or programming work, referring back to it, discussing the findings and how they can guide and inform your decisions.

These are examples of questions that can be asked: How should I target in the northern region given the existing risk profile?; How does the flooding in the west impact people given their pre-existing risk profile? I remember that we found a great dataset on road networks for the INFORM model, I'll go to inform-index.org and download the model so I can access that specific dataset.

Events - Most INFORM subnational models have a launch event to share the completed model and kick off the rollout of the communications and promotions process.

Direct Outreach - Sitting down for a face-to-face or video conference meeting to discuss the INFORM model and opportunities for more data and participation in the common risk analysis process is a good way to share an open data approach and build acceptance and use of the model.

Stand-alone products - Specially made data extractions, fliers and documents based on the INFORM Subnational model are good ways to show the value of the approach. This could be a one-off analysis when a new small scale natural disaster like a flood hits an area that you covered with INFORM subnational. Or an analysis of current risk trends ahead of a national planning process like the Humanitarian Needs Overview exercise can be carried out.

A simple product table that defines output can be helpful, as well as a milestones table that defines which products will go live by which date.

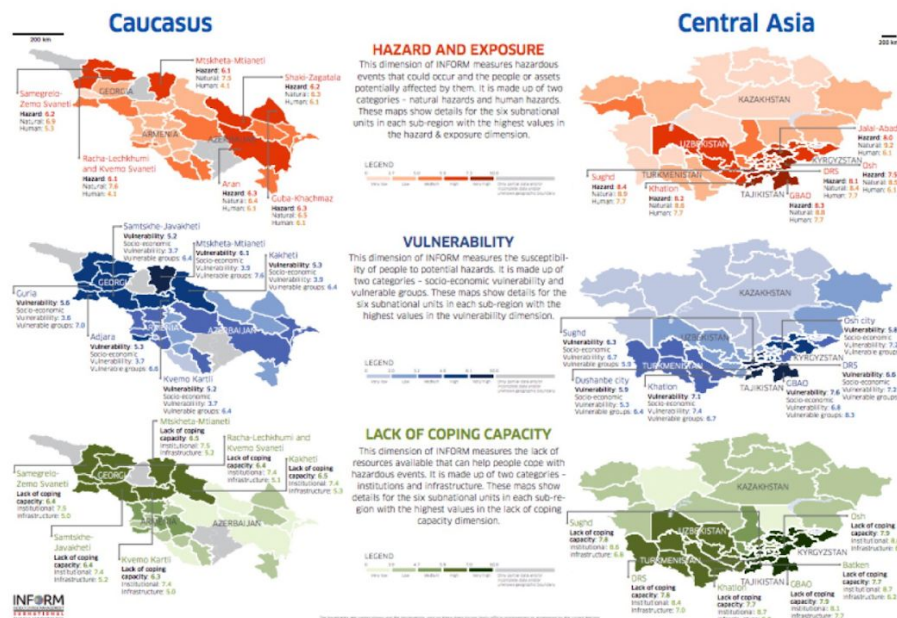
Product table

Type	Details
Handout / webpage	Web page or document about various aspects of the partnership
Blog posts	Short write-ups about various aspects of the partnership
Social media content	Posts by the team
Impact stories / reports	A story and/or report demonstrating the impact of the partnership
Photographs	Photo slideshows from the workshop and region
Video	Video links or testimonials. Always share the INFORM global video

Milestones

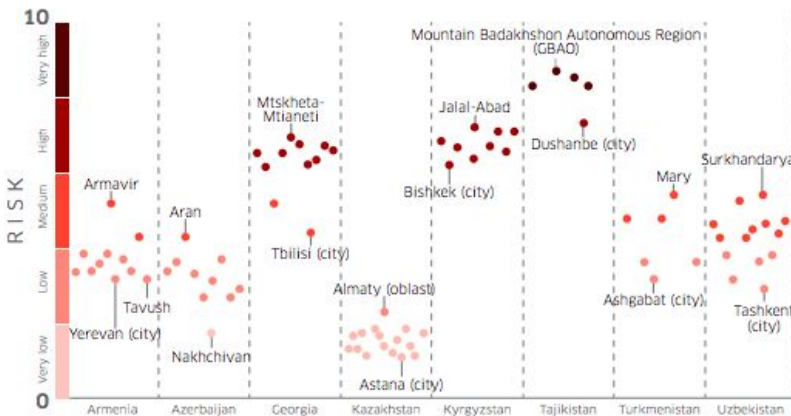
Quarter	Communications Deliverables
Q1	Tweets announcing the model Launch event Handouts, fliers and presentations
Q2	Blog post Working group sessions
Q3	Video Event to update the model for next year's release
Q4	Handouts for working group Event to use INFORM Subnational in the national planning process

The INFORM Central Asia team created a flyer on the model and its findings, illustrated below. The [full presentations](#) are available in the resources link to this training.



Risk distribution

The graph below illustrates how risk levels are spread within a country and allows comparison across the region. All oblasts in Tajikistan are more prone to risk than any other country/region in the Caucasus and Central Asia.



Data reliability

The model includes a **reliability index**, which considers missing indicators, the recentness of the data, and the degree of subnational data that was included (national averages were used when subnational data was missing - a less desired practice). The reliability index scores data on a 0 to 10 scale, where 10 is least reliable. The reliability index shows that results for all areas in Turkmenistan are deemed less reliable.

How to use the model

- National government or intergovernmental risk assessment and development planning can be updated to include INFORM results and components.
- By relying on shared risk analysis, government, donors, humanitarian & development actors can align their actions and funding decisions towards risk reduction and management.
- INFORM can help integrate disaster risk management into ongoing government, development, DRR, humanitarian, and preparedness planning processes.
- Validated to global standards, INFORM can support inter-agency processes: Common Country Assessment, UN Development Assistance Framework, Humanitarian Program Cycle, etc.

Developed by OCHA for the Regional IASC Task Force for the Caucasus and Central Asia Creation date: 17 Apr 2017 Updated: 4 July 2017 More info: <http://www.inform-index.org/Subnational/Central-Asia-Caucasus>
Subnational data sources: Agency on Statistics under President of the Republic of Tajikistan, Committee on Statistics of the Republic of Kazakhstan, National Statistical Committee of the Kyrgyz Republic, National Statistical Service of the Republic of Armenia, National Statistics Office of Georgia, State Committee of the Republic of Uzbekistan on Statistics, State Committee on Statistics of Turkmenistan, State Statistical Committee of the Republic of Azerbaijan, CIESIN, EC-JRC, EM-DAT, ETH Zürich, FAO, GADM, CSHAP, HIIK, IFRC, National Red Cross/Crescent Societies, OPHI, OSM, UNDR, UNHCR, UNICEF, UNEP, UNISDR, USCS, WHO.
Sources for data at national level: Barro and Lee, Central Bank of Russian Federation, Inter-Parliamentary Union, National Central Banks, OCHA, OECD, Transparency International, UNCEC, UNIQD, World Bank, XE.

4.5 Persistence and evolution

These are a few ideas on how to make the INFORM Subnational a perennial process. These approaches are a starting point. Other approaches can be designed and implemented to embed risk informed planning and programming in a specific context.

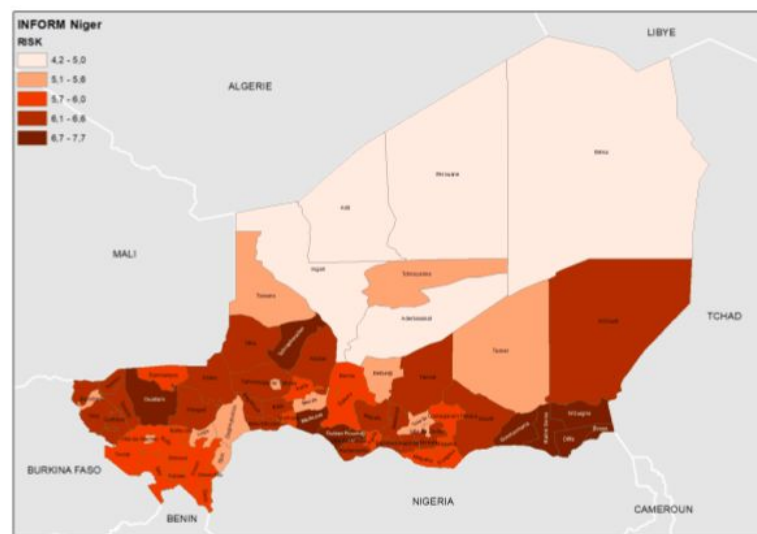
The key to making this process work is persistence and evolution. Try a promotion technique consistently each week or month for several months (such as regular meetings, products or social outreach). Watch and take notes the results. Ask yourself: Is it working? If it is working, do more of it. Is no one listening or using the model? Then try a different type of approach and start the test/listen cycle again. The idea is to try something consistently, understand if it is working, and then push it to a higher level based on feedback.

MODULE 5: Using INFORM subnational: practical examples

INFORM is a risk management approach. It is the only cross sectoral risk management tool of its kind. But risk thinking is new to many seasoned humanitarian practitioners who are often in a response mindset. Practical advice will need to be given on how to integrate the INFORM subnational model into colleagues' work.

Module 5 provides examples on the use of INFORM in decision making and planning exercises. Specifically, INFORM subnational pilots conducted for Niger, Sahel region, and Guatemala are described, and the context, ways the team advises other on the model's use, and the shared credible analysis, and decision support the model provides are specified.

5.1 Niger national model



<http://www.inform-index.org/Subnational/Niger>

The context

Niger experiences significant natural hazards from drought as well as instability in its regions bordering Lake Chad and Nigeria. It was challenging to find Admin 2 level data for Niger. Nonetheless, the model brings together relevant datasets for a useful analysis.

Ways the team advises others on use INFORM model

The management focal point is the OCHA office in Niger. The OCHA team intends to include the model in the Humanitarian Needs Overview and Humanitarian Response Planning cycle that happens each year. While this standard planning process occurs once a year, given the fluid context in Niger, partners insisted that the team update the model with new data every six months, to help them understand how the trends are evolving, and what risks are facing the people they are tasked to serve.

Shared credible analysis

INFORM Niger provides a credible neutral platform for discussions of risk. Many of the agencies operating in Niger have their own internal risk assessment tools which help define specific programing decisions. It is useful to compare these internal tools to a broad based, participatory tool like INFORM

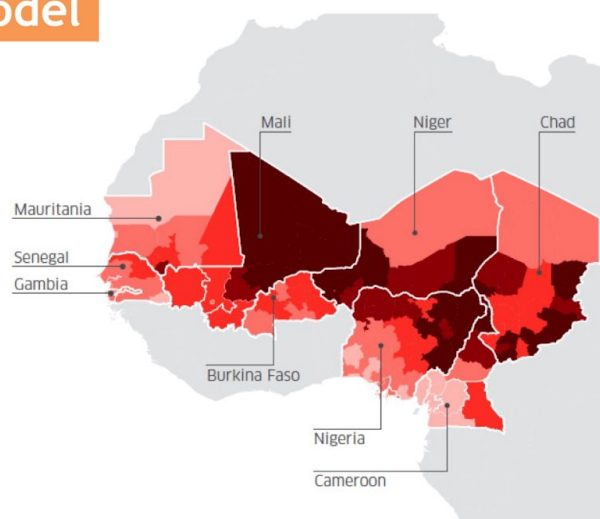
Niger to balance individual agency focus with wider choices. Partners consider, how are the scores different? How are they the same?

Decision support

Finally, INFORM Niger offers an integrated way for humanitarian organizations to understand and program activities where humanitarian, development and governmental activities are ongoing and inter related. It helps answer questions such as, How can humanitarian programming also support development and governance activities? How can we use data to understand a complex environment? These are ways to use the model in practice in a country such as Niger.

5.2 Sahel regional model

Sahel regional model



<http://www.inform-index.org/Subnational/Sahel>

The context

The regional INFORM Sahel model was initiated by the Emergency Response and Preparedness Group of the regional Inter-Agency Standing Committee (IASC) and is managed by OCHA.

Ways the team advises others on its use

The INFORM model is being used to support the Humanitarian Programme Cycle and coordinated preparedness actions. Partners hope to use the model to improve cooperation between humanitarian and development actors in order to better manage risk and build resilience across the region. In concrete terms, this means that INFORM partners keep the model updated through yearly collaborative update processes. They present the model consistently at coordination meetings, and use it as a way to discuss shared goals and strategies with governments and regional organizations. The model came from humanitarian organizations, but becomes a way to discuss risk and what actions to take to meet this risk with governments and development organizations.

Shared credible analysis

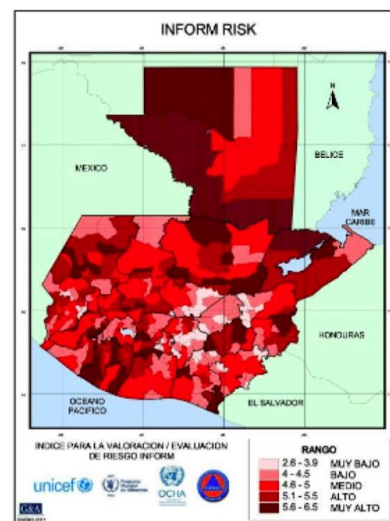
The INFORM Sahel model provides a central location to bring together risk data from a massive region in order to understand how many diverse trends around hazard, vulnerability and capacity interact to affect people who live in these areas. The open nature of the risk model makes it possible to have an impartial starting point in a politically complex and interconnected agency and governmental environment.

Decision support

Each country in the region has a unique strategic planning process for humanitarian, development and governmental activities. The INFORM Sahel model offers a connection point for understanding transnational trends and their impact on people so we can design better programming to meet these challenges. The model helps answer the question, “Where are people most at risk across this region so that we can plan and act to support their ability to survive and thrive?”

5.3 Guatemala municipal model

<http://www.inform-index.org/Subnational/Guatemala>



The context

INFORM Guatemala is a municipal risk index that identifies risks, threats, vulnerabilities and response capacities in the 340 municipalities of Guatemala. The municipal risk index simplifies information about crisis risk and is comprised of 29 indicators representing the three dimensions of risk: hazard and exposure, vulnerability, and lack of coping capacity.

Ways the team advises others on its use

The results of the Guatemala INFORM index are used by the National Coordination System for Disaster Risk Reduction (CONRED) for analysis of risk of humanitarian crisis and disasters, municipal response capacities and potential humanitarian needs. Government institutions, civil society and international cooperation organizations also use the results to focus the design and implementation of development programs and projects.

This is a great example of a tool that is managed by many organisations, specifically UNICEF, OCHA and WFP and which has a direct link to the national authorities as a planning tool. This is the first INFORM

model to directly link to national authorities in this way, and an excellent idea that other models should emulate.

Shared credible analysis

The INFORM model in Guatemala allows international agencies and national authorities to develop a shared understanding of risk, and a establish common ground for understanding what issues drive this risk.

Decision support

The model provides a neutral evidence base for discussions around program locations, project focus.

5.4 Contacts and links

- All models and additional information are at www.inform-index.org
- Please join the [INFORM Skype Group](#)
- Email the INFORM Global Lead here: coordination@inform-index.org
- Email the technical lead here: technical-support@inform-index.org

Making it work for you

Everyone approaches the INFORM subnational process with a unique set of needs. With a specific national or regional context in mind, it is important to consider how the INFORM methodology can develop a better understanding of risk to support programs to help users meet these challenges.

In addition, everyone brings a different skill set to the INFORM process. Some actors may have a strong grasp of the quantitative data processing but need to understand how to better involve partners and build consensus and data sharing around the model. While other actors may be more comfortable managing the process and convening the partners but need to master the data processing elements. This guidance is intended to guide actors in acquiring the mindset, strategies and tactics to tackle the various elements of the process. Critically, the INFORM network of professionals and agencies are available to help along the way.



INFORM is a collaboration of the Inter-Agency Standing Committee Task Team for Preparedness and Resilience and the European Commission. INFORM partners include:



Other INFORM partners are welcome. Partners commit to do one or more of:

- 1) facilitate the use of their data in INFORM,
- 2) provide expert guidance for the INFORM initiative,
- 3) provide in-kind or financial support.

For more information, go to www.inform-index.org.

Note: The geographical boundaries and names shown and the designations used in this report are not warranted to be error free nor do they necessarily imply official endorsement or acceptance by INFORM or any INFORM partner organisation. Every effort has been made to ensure the accuracy of the information contained in this report. All information was believed to be correct as of November 2015. Please check www.inform-index.org for the latest results.