

Country Prioritization Methodology **Introductory Brief**

A model to identify and prioritize at-risk countries for engagement in telecommunications preparedness

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Foreword

The Emergency Telecommunications Cluster (ETC), led by the World Food Programme (WFP), is a global network of organizations that work together to provide shared communications services in humanitarian emergencies. It coordinates a network of partners to deliver reliable technology and services that enable resilient communication environments to meet humanitarian needs. To better determine countries which can benefit from ETC service engagement—from coordinating preparedness workshops to providing infrastructure support to local broadcasters—this introductory brief has been developed by the Global ETC to detail the Country Prioritization Methodology.

The ETC supports the Sendai Framework for Disaster Risk Reduction (2015–2030)¹ endorsed by the UN General Assembly, which acknowledges that Disaster Risk Reduction requires an *all-of-society engagement and partnership*, which promotes the empowerment and inclusive, accessible, and non-discriminatory participation of all people disproportionately affected by disasters, especially the poorest.

ETC Services Overview

From conflicts to natural disasters, the ETC deploys to provide vital communications services. Since 2005, the ETC has responded to over 40 humanitarian crises around the world. [ETC services](#) include internet connectivity, security communications, telephony, customer support, Common Feedback Mechanism (CFM), local broadcaster support, and Unmanned Aircraft Systems (UAS) Coordination. The cluster also focuses on global and country preparedness to ensure coordination of emergencies and preparedness activities across national and global channels.

Introduction

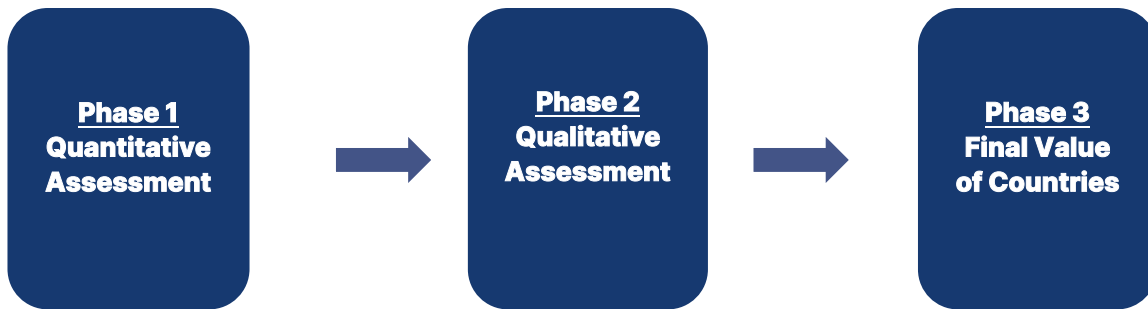
There is an increase in the frequency of disasters across the world and emergency preparedness is a powerful way to mitigate risks and improve the capacity of communities. However, it is not always easy to identify the countries that would most benefit from the assistance of the Global ETC and its preparedness operations, especially when there are countries with multiple disasters and varying hazard types.

The Global ETC has developed a methodology to prioritize those countries most at risk. This model, to be used annually, will entail a thorough analysis of countries at risk as well as their Information and Communications Technology (ICT) capabilities. This list will be used as a tool to inform the judgments regarding local ETC activation, while the ETC supports establishing partnerships with countries which are not included in the final listing. The country prioritization methodology presented in this brief illustrates the considered quantitative and qualitative assessments as well as the weight distribution.

Methodology Overview

The methodology is composed of three phases, which together, produce a final list of ≤20 countries to be prioritized by Global ETC for preparedness operations. The first phase is a quantitative assessment which consults four publicly available indices, the second phase is a qualitative assessment whose data is collected via ETC Partner survey, and the third phase is the calculation of the average of the quantitative and qualitative values. The details of each phase are as follows:

¹ https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf



A quantitative assessment that results in an initial list of 20 countries by considering 1) human, climate-based, and rapid onset disaster emergency risk and 2) national telecoms capacity.

A qualitative assessment that allows one to remove countries from the initial set of 20, and evaluate countries based on national and partner feasibility.

By calculating the average of the quantitative and qualitative values, a final value is deduced for each country. Based on this final value, the ≤20 countries are ranked accordingly, from highest value to lowest.

**The threshold of 20 countries is tentative and should be adjusted to reflect ETC's capabilities*

Phase 1: Quantitative Assessment

The first phase is a quantitative assessment that results in an initial list of 20 countries by considering the risk profile and national telecommunications capacity. Each country is measured against two criteria: 1) human-induced, climate-based, and rapid onset disaster risk, and 2) national telecommunications capacity. The criteria are respectively answerable to the questions, 'which countries are most at risk?' and 'where can ETC Preparedness operations have the greatest impact?'

For the criterion 'Human-induced, Climate-Based, and Rapid Onset Emergency Risk,' three indices are consulted: the INFORM Risk Index, the World Risk Index, and Climate Risk Index. For the criterion 'National Telecommunications Capacity,' the ICT Development Index 2017 is consulted. The two criteria are given equal weight of 50%. The 20 countries which receive the highest total score following the scoring method below are transferred over to the second phase. If a country's indicator value is missing, the average of the available values should be deduced.

CRITERION	COMPOSITION	INDICATOR	SCORING MODIFICATION	SCORING	WEIGHT
Human-induced, Climate-Based, and Rapid Onset Disaster Emergency Risk	Rapid onset disaster (earthquake, flood, tsunami, cyclone, drought, epidemic) and human hazard & exposure for overall risk calculation	INFORM Risk Index	none	The average of the three indicators should be deduced.	50%
	Includes long-term adaptation capacities to risks for rapid onset disaster hazards- earthquakes, cyclones, floods, droughts, sea-level rise	World Risk Index	Index score/5	For each indicator, a 10-point scale with 0 being the lowest risk and 10 the highest risk;	

	Impact of climate-based events based on fatalities and losses.	Climate Risk Index [Germanwatch based on multiyear average 1999-2020]	0.05555556*(180 - Index score)		
National telecoms capacity	Readiness levels in terms of ICT capacities, systems, and infrastructure.	ICT Development Index	10 – Index score	10-point scale with 0 being the most and 10 the lowest in ICT development; equal weight	50%

The methodology combines three indices for the first criterion ‘Human-Induced, Climate-Based, and Rapid Onset Disaster Emergency Risk,’ because the indices on their own fail to be comprehensive. For example, the INFORM Risk Index does not account for climate-based risks but considers rapid onset disaster risks by accounting for human and natural exposure and hazards, measures vulnerabilities, and lack of coping capacity. The World Risk Index only accounts for five natural hazards but observes capacities for long-term strategies for societal change. The Climate Risk Index accounts for climate-based risks but does not take into consideration the coping capacity or the infrastructure of the country, which results in a one-dimensional assessment of the countries which experience the most climate-based risks. To mediate for their respective shortcomings and biases, the three indices are grouped together to assess various emergency risks in a country and its coping capacities.

It is important to note that the index for the second criterion, ICT Development Index, is outdated, as its latest report was in 2017. To overcome this shortcoming, alternatives were explored such as the International Telecommunication Union (ITU) [World Telecommunication/ICT Indicators Database 2021](#). However, the database does not include a final, singular value for each country as the ICT Development Index does, presenting significant limitations for its inclusion in a methodology. Further, the value cannot be individually derived, as the indices which were included in the ICT Development Index are missing. Therefore, as an alternatively sufficient index is absent, until the next ICT Development Index or an equally sufficient index is produced, the existing 2017 ICT Development Index should be used for the methodology.

Phase 2: Qualitative Assessment

The second phase is a qualitative assessment that allows one to remove countries from the initial set of 20. The selected countries are measured against two criteria: national feasibility in-country and partner feasibility in-country. When a country has one or more qualitative indicators with a value of 0 (not feasible), that country is immediately removed from the listing.

For each country that has not been removed from the listing, an average of the qualitative values on a scale from 1-10 is deduced, where a higher value represents the highest feasibility. The indicators are based on the ETC Partner survey that is collected by colleagues in Country Offices, and officers of the Global ETC team.

CRITERION	COMPOSITION	INDICATOR	SCORING	WEIGHT
National feasibility in-country	Country uptake potentials, including clear activities, an implementation timeline and national stakeholder interest and engagement.	Qualitative [This data should be collected via ETC CPR survey.]	10-point scale with 0 being the lowest feasibility and 10 the highest feasibility 0: not feasible (rule-out criteria)	70%

Partner feasibility in-country	Presence and readiness of ETC partners for in-country project implementation.	Qualitative [This data should be collected via ETC CPR survey.]	10-point scale with 0 being the lowest feasibility and 10 the highest feasibility 0: not feasible (rule-out criteria)	30%
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Phase 3: Final Value of Countries

The average of the quantitative and qualitative assessments is calculated for each country with the following equation:

$$\frac{\text{Quantitative Average} + \text{Qualitative Average}}{2} = \text{Final Value}$$

Based on their final values, the ≤20 countries should be listed and ranked accordingly, from highest value to the lowest. This final list reflects, in order, the countries that should be prioritized by Global ETC for preparedness operations.

Case Study: Haiti

The country prioritization methodology has been conducted for Haiti, which is particularly prone to emergency disasters. With its geographic location in the path of Atlantic hurricanes, steep topography in the western region from which all major river systems flow to the coast, Haiti is particularly vulnerable to hydrometeorological disasters.² Most recently, in August 2021, Haiti experienced a 7.2 magnitude earthquake, which left more than 1,900 people dead and almost 10,000 injured.³

Following the 3-phase model, the average of the quantitative value was determined to be 7.20, the qualitative value, 5.5. The qualitative assessments were populated with dummy variables for the time being due to the lack of existing ETC Partner survey results. The average of the two values resulted in the final value of 6.40, ranking the country higher than Dominican Republic, whose final value was 4.47, and Switzerland, whose final value was 1.90. Haiti’s final quantitative value is comparable with that of Niger (7.19) and Vanuatu (7.09). The detailed methodology for the case study is as follows:

1	QUANTITATIVE ASSESSMENT	Human-induced, Climate-Based, and Rapid Onset Disaster Emergency Risk	Rapid onset disaster (earthquake, flood, tsunami, cyclone, drought, epidemic) and human hazard & exposure for overall risk calculation	<u>INFORM Risk Index</u>	None 6.2	The average of the three indicators should be deduced. For each indicator, a 10-point scale with 0 being the lowest risk and 10 the highest risk; 6.12
			Includes long-term adaptation capacities to risks for rapid onset disaster hazards- earthquakes,	<u>World Risk Index</u>	Index score/5 2.91	

² World Bank Group. (2021). *Haiti*. Retrieved from Climate Change Knowledge Portal: <https://climateknowledgeportal.worldbank.org/country/haiti/vulnerability>

³ Save the Children. (2022, March). *Haiti Earthquake*. Retrieved from Save the Children: <https://www.savethechildren.org/us/what-we-do/emergency-response/haiti-emergency>

			cyclones, floods, droughts, sea-level rise			
			Impact of climate-based events based on fatalities and losses.	<u>Climate Risk Index</u> [Germanwatch based on multiyear average 1999-2020]	0.05555556*(180 - Index score) 9.240	
		National telecoms capacity	Readiness levels in terms of ICT capacities, systems, and infrastructure.	<u>ICT Development Index</u>	10 – Index score 8.28	10-point scale with 0 being the most and 10 the lowest in ICT development; equal weight
2	QUALITATIVE ASSESSMENT	National feasibility in-country	Country uptake potentials, including clear activities, an implementation timeline and national stakeholder interest and engagement.	Qualitative	None 7	10-point scale with 0 being the lowest feasibility and 10 the highest feasibility 0: not feasible (rule-out criteria)
		Partner feasibility in-country	Presence and readiness of ETC partners for in-country project implementation.	Qualitative	None 4	10-point scale with 0 being the lowest feasibility and 10 the highest feasibility 0: not feasible (rule-out criteria)

Limitations

Due to the objective of creating a simple, plug-in model, this methodology faces limitations. Primarily, the national telecoms capacity is measured by the ICT Development Index, whose last report was in 2017. This methodology has attempted to overcome this shortcoming by integrating alternative indices but was not successful in the search for other publicly available reports which derived a singular variable for each country regarding ICT capacity. However, to ensure that the latest IDI values could be used for the methodology, the 2017 report has been compared against all previous years' findings, which indicated that there was a very marginal difference in the final values for countries.

Furthermore, the methodology fails to look beyond the national telecoms capacity as described in the ICT Development Index and assumes that it is comprehensive indicator. However, this hides relevant issues such as the variety of available ICT infrastructure which is unaccounted for in the ICT Development Index. For instance, Tonga has a high mobile coverage, penetration, and affordable prices yet because of a single submarine cable and reliance on it, the country experience complete disconnection following the earthquake in 2022. Moreover, the methodology assumes that the risk profile of a country can be captured by the three indices consulted for 'Human-induced, Climate-Based, and Rapid Onset Disaster Emergency Risk,' and outstanding variables beyond the three indices are not accounted for.

It is also worth mentioning that the methodology does not include a separate criterion for vulnerable groups. This option was explored but deemed unnecessary as consideration for the groups is incorporated throughout the indices. The World Risk Index includes gender equality as one of the factors for calculating adaptation in the calculation of vulnerability. The ICT Index also includes schooling as one of the main factors for determining ICT skills. The INFORM Risk Index considers uprooted people, undernourished people, children under five years old, those with specific health

conditions, and those who have recently experienced a shock under the category of vulnerable groups. Due to such consideration within the indices, as well as the fact that having a separate criterion would have favoured certain vulnerable groups over others, the methodology refrains from including a separate criterion. Therefore, for gender or income-specific analyses, this methodology may not be suitable.

Due to the aforementioned limitations, this methodology is encouraged to be used to inform the judgments of ETC regarding local ETC activation, but complete reliance on it is not recommended. It can be a useful tool in indicating primary countries which require assistance in preparedness, but alternative factors which lie outside of this methodology should also be considered on a qualitative basis.

Conclusion

In its goal to create a world where safe and local access to communications is always reliable, the ETC prioritizes regional and country preparedness. One of the cluster's strategic pillars for 2025 concerns improving the resilience of regional, national and community actors based on best practice and mainstreaming the preparedness mindset. To achieve this goal, the ETC plans to work with stakeholders in vulnerable countries and regions to strengthen ICT preparedness holistically at a country level working with national and local government agencies, civil society groups, humanitarian organizations, the private sector, and the population itself.

To action this objective and to best identify the spaces for capacity-building, this country prioritization methodology can serve as a vital tool as it allows the Global ETC team to derive a final list of ≤ 20 countries at most risk where ETC activities and projects, especially in country preparedness and partner coordination, can have the greatest impact.

By following three phases, the methodology demonstrates a thorough analysis of both the quantitative and qualitative factors, which are weighed equally to prevent final skews in assessment. By considering indices which are publicly available and conducting partner surveys, the methodology arrives at a final, comparable value for each country. The methodology, consistent with the approach adopted by WFP across other clusters, serves as a powerful decision-making tool as it quantifies emergency risks and the impact of a global ETC-led project.

Annex

ETC Country Prioritization Methodology Survey

The ETC CPM Survey provides the qualitative dataset for the country prioritization methodology. It conducts two assessments: 1) national feasibility in-country and 2) partner feasibility in-country, with yes/no questions. For national feasibility in-country, ten questions are considered. If the response is yes, a value of 1 is given. If the response is no, a value of 0 is provided. For partner feasibility in-country, five questions are considered. If the response is yes, a value of 2 is given, and if no, 0. Based on the total values of the national feasibility in-country and partner feasibility in-country, a final qualitative value is derived using the following equation:

$$(n * 0.7) + (p * 0.3)$$

n = national feasibility in-country sum
p = partner feasibility in-country sum

National Feasibility in-country

***if yes, 1; if no, 0**

1. Is there a designated government ministry/agency responsible for disaster management in the country?
2. Is there a standard operating procedure in place, outlining the role and mandate of the ICT ministry/ agency and regulator, with regards to preparedness and response?
3. Are there clearly defined points of contact established for disaster management in the respective agencies/ministries involved?
4. Can key contacts (identified in question 5) be reached at any time of the day or night?
5. Is there a national emergency telecoms cluster group established, representing key ICT contact persons?
6. Are roles, goals, and responsibilities coordinated across national to sub-national and community levels?
7. Is telecommunications/ICT prioritized, or addressed, as a critical function or priority within the country's disaster management framework?
8. Does the communications ministry/agency or regulator coordinate with, and participate in, the activities of the national disaster management agency?
9. Has an inter-organizational preparedness exercise been conducted in the last 24 months?
10. Is there an updated available list of telecommunications, information technology (IT), payment technology, and payment switch providers?

Partner Feasibility in-country

***if yes, 2; if no, 0**

1. Has ETC worked with any partners in this country in the last two years?
2. Are there any known activities currently being carried out by ETC partners in the country?
3. Is there an ETC Partner engagement approach in place for coordinating disaster preparedness and response in the country?
4. Are ETC Partners coordinated with frequently for preparedness and response readiness activities and actions?
5. Have processes been established in advance for both the entry of experts and communications equipment in times of disaster, such as the ratification of the Tampere Convention?

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ETC Preparedness:

Chaewon Lim (Jennifer), Ria Sen, Sudhir Kumar, Phyza Jameel

Emergency Telecommunications Cluster (ETC)

United Nations World Food Programme

www.ETCluster.org

Global.ETC@wfp.org