

ETC

preparedness:

Service delivery

model

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1. ETC's role in Country Preparedness and Resilience

National authorities have primary responsibility for preparedness. However, Resident Coordinators (RC) (and Humanitarian Coordinators (HC) where they exist) have a responsibility to ensure that the humanitarian system is able to support national actors and is equipped to respond to a crisis. The RC/HC will therefore call on Cluster Lead Agencies to operationalize emergency response preparedness (ERP) in their respective sectors and monitor its quality and comprehensiveness¹. The ETC supports and engages in ICT country preparedness, building resilience through strengthening the capacity of national actors.

As a cluster the ETC has a mandate to work with national and local authorities, and where possible to de-centralise emergency response capacity. For this reason, the ETC works on ICT Country Preparedness, strengthening the capacity of national and local authorities and other national actors.

With increasing requests to the ETC and limited capacity, the ETC is focusing on regional engagements to strengthen ICT preparedness. Countries within the same region often face similar risks, as hazards do not stop at borders. By pooling resources and sharing experiences, regional cooperation can be more effective and help avoid isolated, siloed approaches. Regional projects tend to gain momentum when a "champion" country leads the way, inspiring others to follow and learn. The ETC's role is to harmonize national capacities, ensuring that countries progress together rather than at varying stages. South-South cooperation is central to this effort, with knowledge exchange, capacity building, and experience-sharing driving collective regional advancement.

2. Response with a Preparedness mindset

Country preparedness and resilience activities are considered during all phases of the humanitarian program cycle, including the response. The ETC may have resources and funding during the response phase, which presents an opportunity to design response activities that contribute to preparedness and resilience while responding. When preparing a Concept of Operations (CONOPS), preparedness and resilience outcomes shall be included.

The Humanitarian Programme Cycle (HPC)

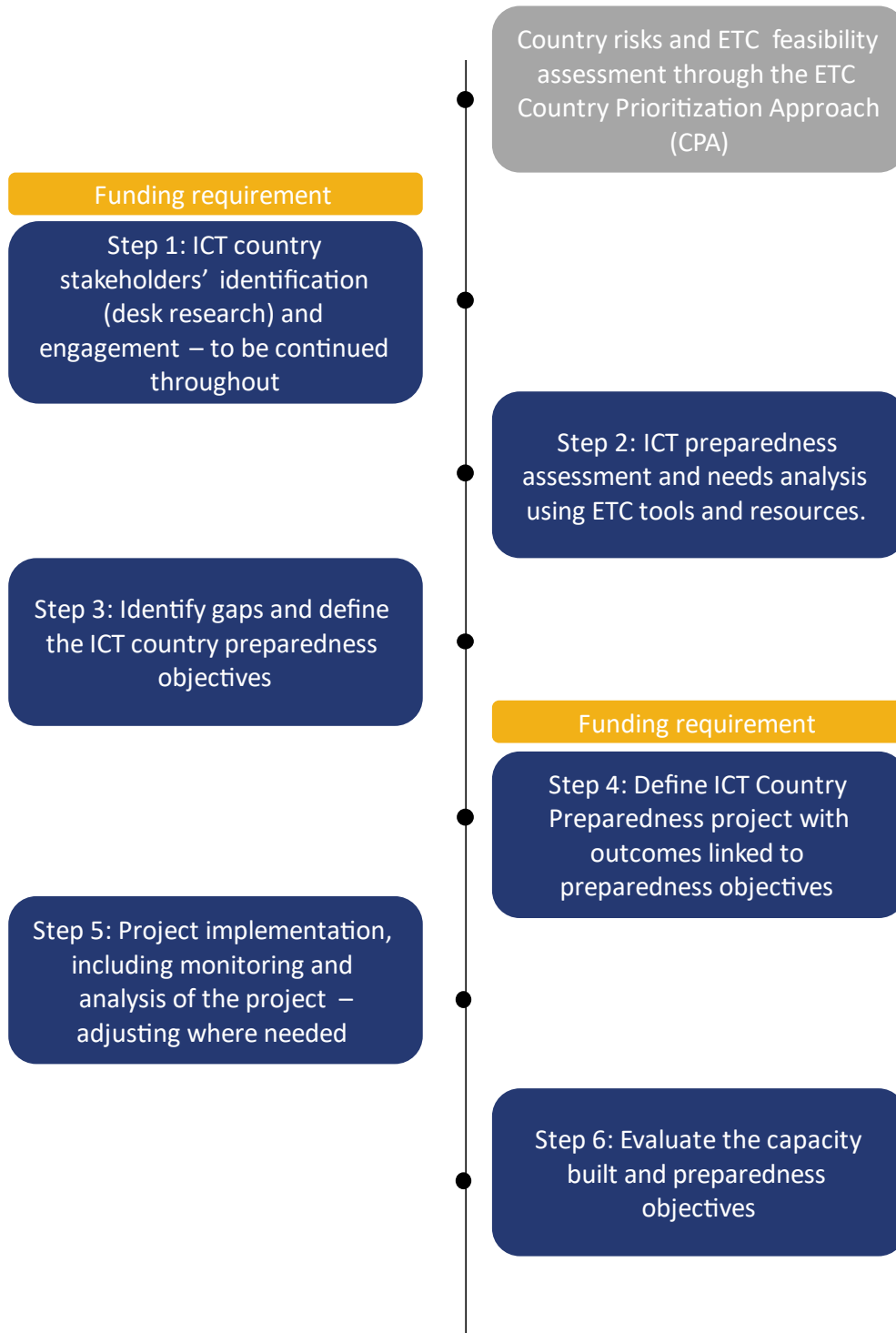


Source: "The implementation of the humanitarian programme cycle module, version 2.0, July 2015, IASC"

3. ETC Country Preparedness process

The ETC has based its approach to preparedness and resilience on the United Nations Development Group's (UNDG) capacity development companion guidance, which follows a six-step process. The diagram below aimed at adapting the UNGD six-step process to ETC:

ICT Country Preparedness Process



4. Country Preparedness Prioritisation Globally

ETC country preparedness and resilience projects come from multiple sources. After responding to a humanitarian crisis and during the recovery phase, the ETC looks at building back better, both in terms of infrastructure and local capacity to respond. The ETC also responds to direct requests from countries and monitors locations prone to disaster or other type of crises. For instance, the ETC initiated a preparedness program in the Pacific in response to a request to strengthen ICT country preparedness, as the region is subject to climate related disasters on a seasonal basis.

When prioritization is required, the ETC utilizes its [Country Prioritization Index](#) to guide its engagements. This index is grounded in a robust [methodology](#) that comprehensively analyses disaster-prone countries and their Information and Communications Technology (ICT) capabilities, identifying those most at risk.

Step 1: ICT Country Stakeholder engagement

The commitment and involvement of a strong government counterpart is essential for ICT Country Preparedness. Identify a government agency and if possible, a specific counterpart in the government that will champion any preparedness effort, along with a UN Country team or NGO champion. **Without these two ICT Country Preparedness champions, it is not possible to progress any further along the ICT Country Preparedness path.**

The first part of stakeholder engagement is stakeholder mapping. An example of typical stakeholder mapping is given below:

National and local Government Agencies	Humanitarian Organizations	Private sector Partners	National Population & Civil society
Department of Disaster Management (DDM) or National disaster Management Office (NDMO)	The Red Crescent National Societies	Mobile Network operators (MNO)s	National community radio organization
The Information and Media Authority	The UN World Food Program (WFP)	Internet Service Providers (ISP)	National Scouts
Department of Information Technology and Telecom (DITT)	UN agencies (i.e, UNDP, UNICEF, UNHCR etc)		Amateur radio organizations
National Centre for Hydrology & Meteorology (NCHM)			Academic Institutions

Department of Geology & Mines (DGM)			Other community led organisations and associations
Electricity Authority (EA)			

Step 2: ICT preparedness assessment using ETC tools and resources

This step involves collecting available assessment data on both the disaster context and risks that have been identified, the ICT landscape, and the specific needs of the population. Before going through the ETC-ITU Emergency preparedness checklist and engaging with key government agencies, external sources of information should first be referred to.

2.1. Existing Online resources:

1. ETC country profiles – ICT Country Profile available from the [ETC website](#)
2. [Disaster Connectivity Map \(DCM\)](#)
3. [GSMA connectivity map](#) and [mobile connectivity index map](#)

2.2. In Country Assessments:

The [ETC-ITU Emergency Telecommunications Preparedness Checklist](#) focuses on understanding national readiness to enable communications in a disaster scenario, together with identifying targeted areas which may require attention.

The ETC-ITU Emergency Telecommunications Preparedness Checklist is a guide and does not need to be completed in its entirety. It is important to work closely with the government and humanitarian organisation champion(s), focusing on what is most important and including additional requirements outside of the checklist, if required. For example, if working on a project for a community, it is important to ensure people's voices are heard during the assessment phase.

The ETC-ITU checklist examines "readiness" in four key thematic areas:

1. **National Government:** Roles, Responsibilities, and coordination Provisions
2. **External Coordination:** Key Stakeholders
3. **Capacity Development:** Trainings and Simulation exercises
4. **Infrastructure and Technology:** Requirements, Planning and maintenance.

2.3. Existing and planned: Multi Sector Needs Analysis (MSNA) Humanitarian Needs Overview (HNO) and Humanitarian Response Plan (HRP)

To identify whether a Multi-Sector Needs Analysis ([MSNA](#)) has been carried out for a country, or to find out if one is planned, either contact OCHA offices in-country or REACH, who usually supports these activities. If an MSNA is intended, the assessment questionnaire is typically organised by sectors or clusters, and the development of

ETC-related section should be overseen and approved by the ETC Coordinator via the Assessment Working Group (or relevant local equivalent). Most operations have a Humanitarian Needs Overview (HNO) or a Humanitarian Response Plan (HRP); ICT country capacity building topics should be aligned with the priorities of the humanitarian operation. HRPs can be found on the OCHA humanitarian [response page](#).

Step 3: Identify gaps and define ICT Country Preparedness objectives

This step involves the identification of emergency preparedness goals and the formulation of pathways to capacity development. Where appropriate the ICT Country Preparedness goals should be aligned with the ETC strategy, [Sendai framework](#) on Disaster risk reduction, and/or the priorities of a Humanitarian response plan.

At this stage it is essential for the **UN and Government Champions** to work together on identifying and prioritizing gaps and opportunities. This is **best done face to face** with a half or full day **workshop**.

The output of this step is an **ICT Country Capacity report**, with an itemized list of priority actions, to then form the basis of either Country preparedness undertaken by national stakeholders, or capacity building with the support of the ETC.

3.1. Examples of ICT Country Preparedness gaps

1. Standard operating procedures (SOPs) for inter government agency communication during emergencies not in place.
2. Indications show that stakeholders lack an understanding of the basic requirements that constitutes ICT emergency preparedness and response.
3. Mobile Network Operators (MNOs) do not have emergency response capacity.
4. District and national trainings and emergency simulations do not take place.
5. Clearly defined roles and responsibilities for an ICT emergency response, including coordination structure in case an event occurs, are not present.
6. Regular testing of Emergency Response communications systems is not completed.
7. The role of the private sector is seen as being key, with communications relying on privately owned publicly used network, although these private companies are not sufficiently engaged in emergency preparedness.
8. Redundancy is not built into the telecommunications system.
9. A National Emergency Telecommunications Plan ([NETP](#)) is not Present.

3.2. Example of ICT Country Preparedness Objectives

Thematic Area 1: National Government – Roles, Responsibilities and Coordination Provisions

1. To have a resilient emergency communications system.
2. Clarify roles and responsibilities of all stakeholders in disaster risk management.

Thematic Area 2: External Coordination with Key Stakeholders

1. To facilitate effective partnership amongst all emergency communications stakeholders, resulting in rapid and predictable response from stakeholders, post-disaster.

Thematic Area 3: Capacity Development – Training and Simulation Exercises

1. Well-trained national emergency responders.
2. Disaster-ready population.

Thematic Area 4: Infrastructure and Technology – Requirements, Planning and Maintenance

1. Ensure continuity of equipment functionality in a disaster scenario.
2. Prompt Telecommunications Infrastructure damage assessment.
3. Allow quick recovery and seamless uninterrupted Internet and telephony connections.
4. Facilitate the efficient use/deployment of local staffing and resources.
5. Design and deploy Early Warning Systems in resilient networks to enable real time data collection.
6. Ensure good communication tools are available for post-disaster assistance provision to impacted people.
7. Use disaster-resilient telecoms infrastructure is the standard.

Step 4: Define ICT Country Preparedness Projects with Outcomes linked to Preparedness Objectives

After creating a prioritized list of actions, the next step is to build objectives for Emergency Preparedness either into existing programs or to define a new project and seek funding, working with key stakeholders.

1. Define the ICT Country **Preparedness objectives** for the project, aligning them to the achievement of national development goals, results, and targets. Where possible, consider cross-cutting issues, including Accountability to Affected Populations (AAP) and Gender and Age, which is measured by the [Gender and Age Marker \(GAM\)](#).
2. Define how the new capacity will be measured, including a list of indicators.
3. Complete a **project plan** of the tasks and responsibilities to be carried out.
4. Define your **theory of change**. Explain how activities such as training, infrastructure support and policy support will contribute to the country ICT emergency preparedness objectives. By carrying out this step, any issues that could potentially block the project from building the required capacity can be identified and mitigated.

Technical assistance, simulations, and the ETC service catalogue are there to be plugged into a Specific Preparedness objective, identified, and prioritized by the UN and Government Champion. Here is an example:

- **Preparedness Objective:** Disaster-ready population.

- **How to measure the objective:** Percentage of respondents to the MSNA responding yes to: “do you know what to do in case of a tropical cyclone?”
- **Preparedness project:** Local Broadcaster support.
- **Theory of Change:** This section explains how supporting local broadcasters and implementing a common feedback mechanism will lead to disaster-ready public. In this example this could be:
 - *“Community and commercial radio in country X and region Y has a high penetration rate of 80%, recorded in the Multi Sector needs analysis (MSNA) of 2020. Considering digital literacy and access to a smart phone, access to information through local broadcasters has the highest penetration amongst women when compared to smart phones. For this reason, local broadcaster support has been chosen as one the most suitable ways to communicate with the population in the case of a disaster.*
 - *The National Disaster Management Authority (NDMA) currently creates relevant content on what to expect ahead of a tropical cyclone and the actions to be taken.*
 - *Through engagement with the national-led emergency communications sector meetings, a memorandum of understanding has been signed between the national association of community radio broadcasters and the disaster management authority. Community radio broadcasters participate in the emergency simulations led by the NDMA and run key messaging spots on their shows once per month, before and during the cyclone season.”*

4.1. Technical Assistance for national and local authorities

Technical Assistance to national and local authorities to support their ICT emergency preparedness, can form part of the activities in a Country Preparedness project, including:

- **National authority operational readiness:** reviewing systems and processes of the national authority and providing recommendations.
- **Holistic country assessment:** considering national goals and national ability including the private sector.
- **Coordination:** supporting authorities to set up an ICT coordination group.

4.2. Infrastructure Capacity Augmentation for National and local authorities

The ETC prepares for and provides services from the ETC Service Catalogue for national and local authorities during an emergency. In order to augment the capacity of national authorities to respond, the ETC can handover this infrastructure or services when appropriate as part of a continuous effort to build capacity and preparedness throughout the humanitarian program cycle, or work with these authorities to provide this infrastructure before an emergency.

The ETC service Catalogue represents some of the core competencies of the ETC and their partners, and so is a good place to start when looking to support Country Preparedness.

The table below is a summary of the *ETC service capability*, for further information refer to the [ETC service catalogue](#).

Services:	Users		
	Humanitarian Organisations	National and local authorities	Affected Population
Internet Connectivity	✓	✓	✓
Telephony	✓	✓	✓
Customer Support	✓	✓	✓
Security Communications System (SCS)	✓	✓	
Unmanned Aircraft Systems (UAS) Coordination	✓	✓	
Common Feedback Mechanism (CFM)	✓	✓	✓
Local broadcaster support	✓	✓	✓

Table 1: ETC services and customer segmentation.

4.3. Trainings and Simulations for Governments, National and local authorities

The ETC strengthens the capacity of national and local authorities and encourages knowledge-sharing between stakeholders through customized training, workshops and simulation exercises focused on Country ICT preparedness.

ICT Emergency Management for Governments and Partners (ICT4Gov): This course is designed for National and local authorities to develop knowledge and skills to plan, implement and manage ICT solutions to support Emergency Response Preparedness.

[ETC-ITU Emergency Telecommunications Tabletop Simulations:](#) The ETC-ITU have co-authored a tabletop simulation guide, to support and standardise such simulations. These simulations are desk-based and help participants test and refine national plans, particularly national emergency telecommunications plans including policies and regulatory frameworks. These tabletop exercises also give a view of whether networks, redundant communications capacity, personnel, and other telecommunication systems are in place and ready to be used for disaster response.

4.4. Preparedness Projects linked with Objectives examples

Thematic Area 1: National Government – Roles, Responsibilities and Coordination Provisions

- **Objective 1:** Clear roles and responsibilities of all stakeholders in disaster risk management.
 - Project 1: In close collaboration and coordination with the ITU, facilitate the development of a National Emergency Telecommunications Plan (NETP).

Thematic Area 2: External Coordination with Key Stakeholders

- **Objective 2:** facilitate effective partnership amongst all emergency communications stakeholders, Disaster-resilient telecoms infrastructure is the standard.
 - Project 2: Support the national authorities to setup coordination with all stakeholders.

Thematic Area 3: Capacity Development – Training and Simulation Exercises

- **Objective 3:** Well-trained national emergency responders.
 - Project 3: facilitate an ETC-ITU tabletop simulation.
- **Objective 4:** Disaster-ready public.
 - Project 4: facilitate the flow of information regarding emergency preparedness between emergency response and preparedness organizations and the populations. During the Covid-19 crisis in CAR and Libya a Common feedback mechanism was established. Local broadcaster support could also support this objective.

Thematic Area 4: Infrastructure and Technology – Requirements, Planning and Maintenance

- **Objective 5:** Ensure continuity of equipment functionality in a disaster scenario.
 - Project 5: Infrastructure support to national emergency response organisation.
- **Objective 6:** Prompt Telecommunications Infrastructure damage assessment.
 - Project 6: Support building procedures with the national authorities and the private sector who are responsible for maintaining the communications infrastructure used during an emergency.
- **Objective 7:** Efficient use/deployment of local staffing and resources.
 - Project 7: This objective could be included in the National Emergency Telecommunications Plan (NETP).
- **Objective 8:** Design and deploy Early Warning Systems in resilient networks to enable real time data collection.
 - Project 8: In collaboration with the ITU, support the establishment of early warning systems and the communications infrastructure it relies upon.

Step 5: Project Implementation

For the most sustainable long-term results, the implementation should be managed through existing national systems and **led by the Government and humanitarian Preparedness champions**. This could be project management by the National disaster Management Authority, the ministry of telecommunications or decisions and progress tracked through a national led ICT coordination group. Using national structures reinforces change and gives the project a greater chance of success and sustainable results.

The progress of the projects should be monitored with the capacity building objectives in mind, taking evidence based corrective action if it looks like the program activities will not result in the desired outcomes.

The specific country capacity building aspects of any project are:

1. Work in collaboration and/or consultation with national stakeholders.
2. Engage national stakeholders in monitoring the progress of the project.
3. Verify that the **theory of change** specified in the project is still valid. It is possible for project activities to be completed, without the capacity building objectives being achieved, so the validity of assumptions made when preparing the project also need to be monitored.

Step 6: Evaluate the capacity built against preparedness objectives with lessons learned

As a baseline, include a mid-term and final evaluation of the projects and programs, choosing either self or independent assessment. This step is separate from the project evaluation or completion and seeks to measure the capacity built. In the example given in step 4, the MSNA is an excellent way to independently assess the results of the project.

6.1. Return on Investment

The Global ETC has developed a model to assess the value of investing in emergency telecommunications preparedness. This model aims to build a robust body of evidence to advocate for preparedness, ultimately encouraging stakeholders to strengthen disaster-resilient telecommunications, looking at 3 key-areas, namely coordination, capacity building and infrastructure resilience.

The [Return on Investment \(ROI\) model](#) is designed to both quantify and qualify the benefits of these investments. It serves as a powerful advocacy tool, helping to identify key areas for investment at the national level. As a monetary model, it quantifies returns and savings by investment area and calculates the overall ROI. Available to all humanitarian partners engaged in emergency telecommunications preparedness, the model is grounded in the ETC's practical experience across various countries and can be applied across different sectors, reinforcing the importance of preparedness in mitigating disaster impacts.

6.1.1. Country Implementation

To implement the ROI, numerical data is required, namely investments need to be registered and savings during a response based on that investment. In order to do this, the Global ETC team is supporting national stakeholders to fill in the template with pre-filled formulas to calculate the final ROI and provides guidance as needed. The Global ETC is also able to provide support in analysing the finding and prepare key points to present to different stakeholders.

6.1.2. Examples

The ETC supported the implementation of ROI in the following countries:

- Dominican Republic: **2.47**
- Madagascar: **2.96**
- Mozambique: **2.81**

All 3 countries show an ROI close to 3, which translates to: "For every dollar invested in emergency telecommunication preparedness, \$3 is saved during response."

6.2. ROI – Social Return on Investment

Although the ROI model includes a qualitative part, classifying different investment outcomes into "low," "medium," and "high," this approach remains a subjective analysis from the perspective of operators and thus perhaps arbitrary. The SROI aims to quantify other cost savings based on aspects such as social, environmental, and socioeconomic factors, as well as what the response would cost if the preparedness activity did not take place. An example of the SROI from the example given in step 4 would be: *"Increasing the percentage of a disaster-ready public from 60% to 80% would reduce damage to private property by an estimated 20% and the total number of those affected by a disaster by 10%. Taking statistics from a tropical cyclone that passed through the area in the last five years, causing XX million in damage and requiring a response of XX million, would lead to a return on invest of XX."*

Appendix

1. Preparedness Resource Matrix

Step	Resources	Stakeholder
Prioritization to decide on engagement	Country Prioritization Index	To help the Global ETC or humanitarian on informed decision-making for engagement
National/Regional ICT stakeholder engagement	ICT Country Profiles Stakeholder mapping (<i>as shown in step 1 on page 5</i>)	List of in-country or regional stakeholders-country or regional stakeholder based on desk-research. Name government and humanitarian organisation champion
ICT assessment and capacity analysis	Existing online resources: <ul style="list-style-type: none"> • Disaster Connectivity Maps • ICT Country Profiles • GSMA connectivity map and mobile connectivity index map In-country assessment to be conducted by ETC: <ul style="list-style-type: none"> • ITU-ETC Checklist • CoNUA toolkit Existing and planned resources: <ul style="list-style-type: none"> • NETP • Multi-Sector Needs Analysis (MSNA) • Humanitarian Response Plan (HRP) 	ICT preparedness assessment using ETC tools and other available online resources.
Identify gaps and define ICT preparedness objectives	ICT Country Capacity report (based on previous step) → Design list of priority action per thematic area	ICT preparedness assessment using ETC tools and resources.

<p>Define ICT Country/Regional project with outcomes linked to objectives</p>	<p>Draft terms of references for Coordination mechanism</p> <p>ETC service catalogue</p>	<p>Project proposal</p>
<p>Project implementation including monitoring and analysis</p>	<p>Where a National Emergency Telecommunications Plan (NETP) is to be created or tabletop simulation is to take place, the following are guides for their implementation:</p> <ol style="list-style-type: none"> 1. ITU Guidelines for NETP (if required): 2. Emergency Telecommunications Table-Top Simulation Guide 	<p>Project status reports</p> <p>ETC closure report at the end</p>
<p>Evaluate the capacity build and objectives</p>	<p>ROI</p> <p>Conduct lessons learned exercise</p>	<p>ETC project evaluation</p> <p>ROI measurement</p>

Acronyms

- CAR Central African Republic
- CFM Common Feedback Mechanism
- DCM Disaster Connectivity Map
- ERP Emergency Response Preparedness
- ETC Emergency Telecommunications Cluster
- EWS Early Warning System
- GAM Gender and Age Marker
- HNO Humanitarian Needs Overview
- HPC Humanitarian Programme Cycle
- HRP Humanitarian Response Plan
- ICT Information Communications Technology
- ITU International Telecommunications Union
- MNO Mobile Network Operator
- MSNA Multi-sector Needs Assessment
- NETP National Emergency Telecommunication Plan
- NDMA National Disaster Management Authority
- NGO Non-Government Organisation
- OCHA Office for the Coordination of Humanitarian Affairs
- SCS Security Communications System
- UAS Unmanned Aircraft System
- ROI Return-on-Investment
- WFP World Food Programme