



NATIONAL PREPAREDNESS PLAN

FOR

SEARCH RESCUE AND EVACUATION INTERVENTIONS IN

RWANDA

June 2022

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ACRONYMS AND ABBREVIATIONS

MIDIMAR:	Ministry of Disaster Management and Refugee Affairs
MINEMA:	Ministry in charge of emergency management
MINALOC:	Ministry of Local Government
MoD:	Ministry of Defense
MoE:	Ministry of Environment
MoH:	Ministry of Health
NADIMAC:	National Disaster Management Committee
NGOs:	Non-Government Organizations
RDF:	Rwanda Defense Forces
RNP:	Rwanda National Police
RRCS:	Rwanda Red Cross Society
RTDA:	Rwanda Transport Development Agency
SAR:	Search and Rescue
SRE:	Search, Rescue and Evacuation
SOPs:	Standard Operating Procedures
SWOT:	Strengths, Weaknesses, Opportunities, and Threats
USAR:	Urban Search and Rescue

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Definition of key terms

- **Search and Rescue** is the search for and provision of aid to people who are in distress or imminent danger. The general field of search and rescue includes many specialties sub fields, mostly based upon terrain considerations. These include ground wilderness search and rescue, including the use of search and rescue canines; urban search and rescue in the city or urban environment; and air-sea rescue over the water.
- **Ground Search and Rescue** is the search for persons who are lost or in distress on land or inland waterways. Traditionally associated with wilderness zones, ground search and rescue services are increasingly required in urban and suburban areas to locate persons with Alzheimer's disease, autism, dementia, or other medical conditions that lead to wandering behavior.
- **Urban Search and Rescue (USAR)** is the location and rescue of persons from collapsed buildings or other urban and industrial entrapments. Due to the specialized nature of the work, most teams are multidisciplinary and include personnel from fire, law enforcement and emergency medical services. These teams also have specialty components such as canine teams, structural engineers, and heavy rigging specialists. They specialize in technical rescue operations in both wide area disasters and single building collapse incidents.

Version Control

Version	Validation Date	Author	Participating Stakeholders	Page Number	Section	Amendment Summary	Authorized by
1.0	28/6/2022	NICKDADI	RNP, MINEMA, MININFRA, WASAC, RDF, UNIHCR, MOH, MINALOC , RRCS		The whole document	First Edition	Ngoga Aristarque (Advisor to the Minister, MINEMA)

NB: This document should be reviewed every two years to ensure its validity to address real situation related to National Preparedness plans for **Search, Rescue and Evacuation interventions in Rwanda.**

1. INTRODUCTION

1.1 Background

Rwanda, like other worldwide countries, faces natural and manmade disasters which are causing deaths, injuries, and other different losses to be take care off. The disaster risks are increasing due to climate change and geological based hazards. This is amplified with the increasing of the country's population which is expected to occur in urban areas with some critical infrastructures exposed to such hazards. Operational response measures must be put in place to mitigate or prevent the effects of those hazards to the communities and their properties. Once the confirmation of any disaster is issued; Search, rescue and evacuation are the most immediate critical operations that are usually performed by members of affected communities, local volunteers, voluntary organizations and the emergency agencies in the direct aftermath of the disaster/emergency incident.

Globally, Search, Rescue and Evacuation (SRE) is a procedure carried out at primary stages, initially to find out persons with injuries in lightly damaged buildings, or even without any injuries and needing assistance, and to help them exit. If the condition worsens and the local groups are not able to control the situation, then the specialist groups within emergency agencies have to be called in for professional help. Primarily, Search and Rescue Operations are undertaken to save the maximum possible number of victims who are trapped in an area affected by a disaster. The basic aim of all such operations is to ensure the survival of the maximum possible number of affected people¹. A plan is worked out with the help of local people through surveys and then appropriate steps are taken by the various teams involved to carry out the operations. Besides physical rescue, the aim is also a systematic and organized approach in a post -disaster situation riddled with chaos and confusion.

Search and rescue generally involve the local people who are well versed with the local terrain and can be instrumental in searching and accessing the trapped victims. Heavy machines such as cranes and earthmovers are used to remove heavy rubble; and special equipment to delicately remove fallen structural elements and reach out inside heaps of rubble with visual or sound equipment for

¹ Preparing for disaster in emergencies: https://www.preventionweb.net/files/8450_gprch1618.pdf

locating survivors. In case of floods and cyclones, boats and helicopters are used to carry out the search and rescue operations by forming teams and carrying out SAR operations in the entire area systematically, each team covering its assigned sectors. SAR teams may even rely on sniffer dogs that are specially trained to smell out human beings trapped under the rubble. After the search, rescue and evacuation, some important steps are required to be taken in order to provide relief to the evacuees.

For Rwanda specifically the above-mentioned aspects of SAR, it is applied to catastrophic and major accidents that can occur, even if infrequently; but affect a lot the communities.

According to MINEMA report², the following table summarizes the effects of different disasters over the past seven years that could be reduced with effective SRE operations in place.

Table 1: effects of disaster in Rwanda from 2015-2021

HAZARDS	Deaths	Injured	Houses Damaged	Roads	Bridges
EARTHQUAKE	2	3	2190	5	0
EXPLOSION	0	0	1	0	0
FIRE	15	63	398	0	0
FLOODS	175	26	2511	32	77
HAILSTORM	0	1	790	0	0
HOUSE COLLAPSE	12	29	17	0	0
LANDSLIDES	300	133	3456	135	85
LIGHTNING	341	873	100	0	0
MINE DISASTER	61	21	1	0	0
RAINSTORMS	274	504	36273	127	143
WILDFIRE	0	0	5	0	0
WINDSTORM	4	53	2464	0	2
TOTAL	1184	1706	48206	299	307

From the table above, Rwanda is mainly affected by many types of disasters/shock that require immediate search and rescue operations in the aftermath of disaster and more evacuation (before and during) to minimize effects. The increased number of deaths cases and injuries can be attributed to not enough readiness among other factors, leading to inadequate capacity to deal with SRE operations. Capacity and readiness for SRE capabilities however have also to be put in place

² MINEMA annual report for Disaster damages effects (2015-2021)

since climate change, rapid urbanization challenges, natural and man-made phenomena may lead to catastrophic events requiring more expansive search and rescue operations.

This disaster preparedness plan for Search, Rescue and Evacuation (SRE) is going to propose solutions for existing problems

1.2 Sector objectives

The national preparedness plan for Search, Rescue and Evacuation plan will allow the country to put in place the required readiness actions and anticipate coordination structures necessary to allow lifesaving and alleviating physical and psychosocial suffering of communities affected by disaster events.

The specific objectives include:

- Conduct capacity assessment for Search, Rescue and Evacuation
- Build an inventory of involved stakeholders and available resources
- Draw and prioritize preparedness interventions options at national and district level

1.3 Scope

With reference to the National Contingency Matrix Plan developed by MINEMA in 2016, Search and rescue (SAR) is the process of identifying the location of disaster victims that may be trapped or isolated and bringing them to safety and medical attention. In the aftermath of tropical storms and floods, SAR usually includes locating stranded flood victims, who may be threatened by rising water, and either bringing them to safety or providing them with food and first aid until they can be evacuated or returned to their homes. In the aftermath of earthquakes, SAR normally focuses on locating people who are trapped and/ or injured in collapsed buildings. After SAR operations, Evacuation is taking place by relocating affected communities to a safer location. Evacuation can also be involved in the relocation of a population from zones at risk of an imminent disaster to a safer location. The primary concern is the protection of life of the community and immediate treatment of those who may be injured. It is however important to note that SAR applies to certain disasters (earthquakes, landslides, floods, fire incidents) and not necessarily to others (drought, epidemics, mass movement ...); Contingency plans are specific to this activity. Some accidents at the airport or CBRNE hazards are also handled specifically with specialized institutions.

2. SECTOR STATUS

2.1 Description of the sector

SRE interventions before, during and after disaster incidents are mainly executed at the national level by institutions in charge of public order, safety and security, namely the Rwanda National Police through the Fire and Rescue Brigade.

The Fire and Rescue Brigade is taking all necessary actions to enhance preparedness measures including setting evacuation plans, resource inventory, increasing public awareness, organizing simulation exercises and training sessions, sensitization on the risks and what measures to be taken when disaster occurs etc. In disaster preparedness, measures to be taken at national level are linked to guidelines development coordination and monitoring activities while at local level, main activities concern organization and implementation of disaster management key actions.

Under the law N°41/2015 of 29/08/2015 relating to disaster management, disaster management organs have been established from the national level to sector level, and their functions and organizations were determined under a Prime Minister's Order. In the intervention sector of Search, Rescue and Evacuation, RNP as the lead institution, coordinates the overall SRE operation, and the following institutions are involved in implementation of operational response activities with their respective responsibilities and abilities:

- MINEMA
- Ministry of Defense (MoD),
- Ministry of Internal Security,
- Ministry of Health,
- Local Government
- Rwanda Red Cross Society, and other Humanitarian organizations with SRE responsibilities

At community level, the members of the affected communities are involved in SRE interventions and they are ensuring that the affected persons are rescued from the danger with the support of locally deployed stakeholders (RDF, RNP, DASSO, RRC volunteers...). For this, they need to be given specific information on the needs.

SRE success depends largely to the effectiveness of local level and community organization. Not only they are on the disaster scene but also they have crucial information on the affected people and conditions/aspects of the impact that could help professional rescuers at National level.

Effective SRE operation depends on:

- Availability of data and information about the risks factors (Hazards, vulnerability, exposure and capacity to cope)
- Effective and timely sharing of information related to imminent risks, potential needs of SRE, and the disaster events requiring SRE interventions
- SOPs on what to do during a disaster event
- Organized capacity and resources in terms of equipment, people and procedures

As the level of planning, organization and coordination, SRE is done in a spontaneous way as an instantaneous live action not through a systematic approach with clear protocols. Communities try to rescue affected neighbors with available knowledge and resources. The central level expected to be more organized and resourceful does not accompany communities for effectiveness and required improvements. This is due to the facts that the nature of the risks, SRE operation is mostly required before and in the immediate aftermath of the disaster event, and most of disaster events are very localized and in remote areas.

2.2 SWOT Analysis

The consultations conducted and the analysis made have revealed that at both community and national level for major potential effects there is no organized data on risks on which a proper planning could be made. The planning is in relation with which capacities and resources in terms of knowledge, equipment and financial means are required vis some vis the risks. The amount of data and information about the levels of risks and the effects vis a vis SRE flow among all concerned actors is insufficient and can't allow effective planning and organized interventions. It is not very clear what institution is in charge of coordinating SRE interventions. The mandate could be joint, but it is necessary to designate who takes the lead and coordinate to allow harmonization and avoid loopholes during an incident.

A SWOT analysis in the sector of Search, Rescue and Evacuation was conducted to illustrate raised strengths, weaknesses, opportunities and threats found in the sector. Results are presented in the below table.

Table 2:SWOT analysis for Search, Rescue and Evacuation

Strengths	Weakness
<ul style="list-style-type: none"> - GoR commitments for DRM and existing capacity (national) - The coordination body through NPDM in place - Availability of a strong legal and policy framework - Skilled and committed personnel in SRE operations at national level - Knowledge of country risk profile - Triggers for hazards are defined - Good collaboration and relationship with SRE teams and affected communities - Existence of disaster management organs - Disaster information management system in place - Existence of contingency plans and response plans at national level 	<ul style="list-style-type: none"> - Insufficient capacity (equipment, tools, skilled personnel) at district and community level - Limited staff in numbers and equipment - Difficult to access some areas for interventions - Insufficient evacuation plans at rural areas - Knowledge and resources for SRE are limited for standardized interventions - Inadequate EWS and mechanisms to inform families at risk - Limited special training and simulations based on SRE operations
Opportunities	Threats
<ul style="list-style-type: none"> - Various stakeholders in SRE operations with humanitarian fund and support - Past experience and lesson learned - Receptive and participative communities - Community approach - The strong existing sector-based intervention and disaster management organs - Opportunity to introduce more formalized trainings on DRM in community-based volunteers training tools 	<ul style="list-style-type: none"> - Effects of climate change and weather patterns, - Topography of the country - No regular budget allocated - Prepositioning of enough materials, equipment and other infrastructure.

3. SECTOR PREPAREDNESS

The primary goal of preparedness is to avert the loss of lives and assets due to threats and emergencies. Key to preparedness is the establishment and strengthening of capacities of communities to anticipate, cope, and recover from the negative impacts of hazards and potential cascading disasters, which may be termed as resilience which incorporates the following capacities:

- I. Increased level of awareness and enhanced capacity of communities against threats and impacts of all hazards
- II. Equipped communities and involved stakeholders with the necessary skills and capability to cope with the impacts of disasters
- III. Increased disaster risk management capacity of disaster management organs
- IV. Developed and implemented comprehensive national and local preparedness plans
- V. Strengthened partnership and coordination among all key players and stakeholders.

As indicated in the sector status, SRE interventions are conducted at community level, district level and national level. Despite of the level of intervention, the sector preparedness plan includes Risk assessment, Coordination and partnership, Response plan, Resource mobilization, Capacity building, and Information management

3.1 SRE Preparedness at community level (see annex 3)

SRE interventions would be almost irrelevant without the primary role that has to be played at community level, by the affected group, their neighbors and their stakeholders. As described above those are the ones on the site during and directly after the effects. Some of the actions have to be taken in real time to be relevant and to serve the purpose of life saving.

For the local level to be able to implement SRE whenever necessary, following are proposed preparedness requirements:

- **Risk determination:** Community members must ahead of time be aware of the risks that can affects members. At community level risk shall be identified under these aspects:
 - o Hazards analysis: the events can occur and cause harm to their community; their magnitude and the frequency; and the level of exposure.

- Vulnerability assessment: the community settings that make households susceptible to the identified hazards; for instance, the gaps in resilience.
 - Exposure: The characteristics of the elements (roads, bridges, houses or other infrastructure) at risks.
 - Capacity: The SRE capacities available within the community that will allow the members to cope with the impact.
- **Organization:** this examines the community protocols that are or can be put in place to ensure rescue of affected members. A community with known risks should have community organization that could allow its members to react and support by themselves before external support can arrive. SRE is a function implemented in a systematic manner and by team. At community level at least some members should be equipped with knowledge related to coordination and organization of the team.
 - **Knowledge and capacity:** DIDIMAC should ensure that communities have sufficient knowledge to intervene. At community level it is not easy to provide formal knowledge. However, through community-based preparedness, community with recurrent and identified risks should identify some members that could support and guide others. Basic knowledge related to first aid, safety and SRE steps could be provided at least twice a year and anytime a disaster event is imminent. Audio visual material should be prepared ahead of time from the central level or from DIDIMAC to facilitate the basic knowledge provision within the community.
 - **Communication and linkage with local authority:** It is necessary to determine who at sector and district level can immediately be contacted to send more support. The available contacts include those of the security organs (RDF, RNP, DASSO) deployed near the community. The linkage and effective communication will even allow the community to be connected to national and specialized support.
 - **Equipment:** Some SRE equipment and materials may be required at community level. Most of them are available within homes and they are deployed once anything occurs.

3.2 At local government level (see annex 3)

By local level this preparedness plan considers the district level as a full operational level and a bridge between the community and national specialized resources.

For SRE interventions, the district is expected the following:

- **Risk mapping:** Knowing the risks that may occur and communities that can be affected.
- **Build community capacities:** The district and its partners should ensure adequate basic knowledge is available within community mapped as mostly exposed to disaster incidents. Capacity building include also to ensure community volunteers teams are organized and set to ensure SRE related interventions.
- **Provide support:** Logistical support is very paramount for the level 2 and 3 SRE interventions. The district level should be ready to support communities to overcome any challenge related to administrative, budget, material for effective SRE
- **Evacuation sites:** Evacuation sites need to be identified during peace time to allow that rescued people are temporary put in safe areas. Number and size of sites should correspond to the risk estimates.
- **Data sharing and advocacy:** The district should be in a position to evaluate whether or not the situation is under control by communities and locally available resources. Any sign of gap should be forwarded to the national level with clear information about the events, impacts, consequences and breakdown data on affected people.

3.3 Central/specialized level (see annex 3)

National institutional with mandate related to search, rescue and evacuation include institutions like Ministry of Local Government, Rwanda National Police, Rwanda Defense Forces, Ministry of Health and Ministry in charge of Emergency Management and they intervene depending on the type of emergency and magnitude. Other government and non-government organizations could also play a role depending on the context. Their roles range from capacity building, resource availing, risk surveillance, coordination and control of response interventions.

- **Training:** Institutions participating in SRE interventions, need to understand various components and phases to be observed for effective SRE interventions. Those components include the following:
 - Risk knowledge
 - Surveillance and warning for timely interventions
 - Identification of impact and needs

- Identification and recording of beneficiaries
- Data Collection, rapid assessment and sharing of information for action
- Linking to other relief services

As part of training process specific simulations exercises should be organized to test the capabilities of concerned actors to deploy and ensure effectiveness of interventions.

- **Resource inventory:** Basing on regularly updated risk profile, institutions participating directly and indirectly to SRE interventions should, periodically, conduct the inventory of available resources, identify gaps and develop alternatives of intervention options. An acquisition plan for equipment classified by the inventory as priority and important for most likely scenario should be put in place.
- **Surveillance and Warning system:** Both preparedness and response rely on timely and accurate information to be effective. Some disasters can be surprising but for most of them risks levels can be assessed in advance and active surveillance can help to identify signs and anticipate readiness and response interventions. For this to work, SRE needs shall be analyzed simultaneously with the estimated and observed risk factors (Hazard, vulnerability, exposure and capacity). If a disaster risk is identified, the analysis shall be to determine whether SRE may be required and if it is the case determine whether or not readiness is effective at all levels. The little time that may be available between the time a warning is issued and that the risk materializes makes a good case for preparedness and readiness actions and avoiding intervention inefficiencies.
- Response systems activation:** The proposed required SRE response functions and related roles and responsibilities are highlighted in the below table:

Table 3: SRE preparedness and response system with Roles and Responsibilities (See annex 1)

S/N	Function and sub activities	Description	Leading institution	Co-leading institution	Involved institutions
Before a disaster					
1	Risk identification -Hazard and shocks identification -Vulnerability analysis - Exposure analysis -Mapping of exposed communities	Risk identification is a continuous activity that has to be done periodically to identify all factors that may lead to major disasters with likelihood of triggering SRE interventions. Reference to agree upon triggers, the leading institution should organize at least every 6 months a comprehensive risk assessment and surveillance.	MINEMA	MINALOC	RNP RDF RRC
2	Planning Review the contingency plans Resource inventory Revisit role and responsibilities of each concerned actor	The national preparedness plan for SRE should be regularly updated, using findings of the risk assessment and consider required adjustments related to roles and responsibilities. Once elements of surveillance determine the risk above 75%, a response plan should be immediately developed.	RNP	MINEMA	RDF MINALOC MoH Rwanda Red Cross
	Response plan: roles and responsibilities -Assign roles basing on the selected response option -Engage affected communities and the local government	A specific response plan shall be developed taking into consideration real context and aspects of the emergency. Roles are assigned depending on mandate and available resources.			
3	Early Warning	Surveillance should use the agreed upon triggers such as forecasted extreme weather, or risk monitoring sessions to generate warnings and trigger development and activation of a specific response plan.	MINEMA	MINALOC	RNP, RDF, MoH, RRC, Meteo

					Rwanda, RWRB
4	Capacity building -Resources inventory -Training and simulation	Implementing institutions should continuously identify the available resources (Equipment, personnel, budget, material) for SRE readiness vis vis the risks levels. Regular training to be organized and equipment/material acquisition plan to be implemented	RNP	RDF	MINEMA MINALOC RRC
After the disaster effects					
5	Information sharing Collect and share primary and secondary data about the incident	The leading institution has the responsibility to inform all SRE members on the occurrence of an incident that has a potential of triggering SRE interventions. The leading institution should communicate and share the initial data and information to all members for their initial consideration.	MINALOC	MINEMA	RNP RDF RRC
5	Pre evacuation	With confirmed threat (when it is possible) SRE may take place before even the risk materialize. With the warning and risk monitoring confirming the threat at above 85% of occurrence with consequent anticipated magnitude, the leading institution and stakeholders may decide to ensure a pre evacuation to anticipate loss of live and other impact.	RNP	MINALOC	MINEMA RDF
6	Impact/need assessment and SRE Operations -Plan for the assessment and setting of targets -Assessment deployment and conduct -Analysis and verification	For SRE, impact and needs assessment are conducted simultaneously. Coordinated efforts ensure that affected people are rescued and taken to safe areas with special consideration to children, PWD, elderly and sick, pregnant and lactating mothers) and any other person with special existing vulnerability or vulnerability brought by the disaster impact. Response operations are conducted in due respect of humanitarian principles and depending on a specific	RNP	MINALOC	MINEMA MOH RDF RRC

		situation. Annex of SOPs and checklist of basic equipment and principles is provided			
7	Linkage with other relief operations	Rescued families may be in need of additional support depending on the nature and magnitude of effects.	MINEMA	MINALOC	RNP
After the intervention					
	After action review: -Identify what worked, and which improvements are required -Evaluate the level of implementation of the response plan -Document lessons learnt Update and review the preparedness plan	At the end of the response interventions, cluster members should conduct a self-evaluation to determine the effectiveness of the intervention and the gaps to be addressed for the next intervention.	RNP	MINEMA	MINALOC RDF RRC

3. ANNEXES

ANNEX 1: PROPOSED BASIC SOPs FOR SRE IN A DISASTER INCIDENT

A. GENERALITIES

A.1 Scope

Search and rescue is a technical activity rendered by a group of (specially) trained personnel, who rescue and attend to the casualties under adverse conditions, where life is under threat. Search and rescue is organized in close cooperation with the community and in a team approach. The search and rescue activities are undertaken in two ways;

1. Community Local Rescuers: With adequate safety measures, rescue immediately after any natural calamities such as flood, earthquake and fire in a community.

2. Outside Community Resources: Circumstances where the situation is grave and the local rescuers do not have required efficiency and equipment, then specialist assistance from outside the community is required.

Rescuers to immediately take up; the rescue activities after a flood, earthquake and fire where people might be trapped by fallen debris and requiring immediate rescue. The community rescuers shall have to be in readiness to respond quickly, when a disaster is likely to strike. The rescuers efficiency level to be maintained thorough practice and demonstrations / mock-drills during the non-disaster period. The rescue team should undergo standard training from time to time.

A.2 Objectives

- To rescue the survivors trapped under the debris, from the damaged buildings or from a storm surge, flood, earthquake, fire etc
- To provide First Aid services to the trapped survivors and to dispatch them for medical care.
- To ensure affected people are taken in a safe environment from ongoing threat and ensure return once the situation is stable and safe
- To take immediate necessary actions, as necessary, for temporary support and protection to endangered collapsed buildings to structures.
- To hand-over, recover and dispose-off the bodies of the deceased.

- To train, demonstrate and raise awareness on how to use the local materials for self-rescue amongst the community people.

A.3 Team composition

Physically and psychologically sound volunteers/workers, male and female, having demonstrated ability, capacity and willingness to work in an emergency, could constitute a rescue team. Volunteers, of both the sex, above 18 years of age, with a minimum education level to read and write in local language.

It is essential that each safe shelter form a SRE group, comprising of 8 members, out of which a minimum of 2 members should be skilled persons. The members should be from the safe shelter, community and from the neighboring villages.

The teams should be trained as regularly as possible, focusing of the most probable risk scenarios.

A.4 Duties of the rescuer

1. **ASSESSMENT:** Proper assessment saves time and improves better performance. Collect information on the extent of; the damage, approach to the damaged area, particulars of the damage, and if any further damage is likely to occur. The assessment can be done in two methods.
2. **INFORMATION:** Information provided by the local leaders or the group leader or from the DiDIMAC/SEDIMAC is important.
3. **OBSERVATION:** Follow the 3 key principles during the survey or assessment
 - a. **LOOK:** See physically the incidents and make a thorough visual inspection.
 - b. **LISTEN:** Listen to all sources of information from the community, from the people, Government records etc. Assess the community data regarding people in danger.
 - c. **FEEL:** Feel convinced regarding the facts, the gravity of the dangers and your own capacity to respond.

A.5 SRE plan

SRE function is a team effort that needs coordination and planning amongst the members for an optimum response operation. After the assessment, the Rescue team would be in a position to adequately plan the Rescue Operation based on the following details and specifications;

- Manpower
- Equipment
- Methods

A.6 Rescue stages

1. Surface Casualty (Emergency Rescue)

To locate the surface casualty, the rescue is conducted from the outer-edges of the damaged area and rescued shall be provided First Aid services. In case the rescued is more severely injured, after providing the First Aid services, dispatch as quickly as possible to the nearest hospital, health center for medical care.

2. Search in Slightly Damaged Buildings (Immediate Rescue)

The rescue team should move towards the slightly damaged buildings after responding to the surface casualty. It might happen that some persons trapped can be contacted but cannot be reached easily. In such events, before entering to the damaged building or house, a careful analysis of the methods best suited to safely rescue the trapped is to be made. The team leader has to take proper decisions without risking the lives of the rescuers or the injured. Safety at all points is to be ensured. The same procedures shall be followed in the case of the trapped people or cyclone/flood - marooned people.

3. Search of Possible Survival Points (Specialized Rescue)

Any chances of a person being trapped or injured are to be searched at all possible places and all options. The rescue team should try with all means to rescue with the appropriate method. Consider safety as top priority.

4. Selected Debris Clearance (Specialized Rescue)

The rescue team should search until all the persons are accounted for and identities are ascertained.

5. General Debris Clearance (Specialized Rescue)

Clear up the debris and reach to the trapped persons, when all possible ways of contacting the trapped persons has failed. Specialized Rescue Teams should preferably carry out the last three stages

B. SPECIFITIES

B.1 Area to be Searched

This involves the division of the designated area into manageable sections. Depending upon the size of the damaged area and the search resources available, an area may be sectored by city block, or other easily definable criteria (i.e., using 100, 1000, or 10000 meter square). The available search resources will be divided and apportioned to each sector for search operations.

B.2 Priorities

The search area is evaluated for priorities in terms of the type of occupancies affected, amount of damage, pre-evacuation, etc. Areas with the highest likelihood of survivability (in terms of type of construction) and the number of potential victims (in terms of the type of occupancy of the building) will receive attention first. Occupancies such as schools, hospitals, nursing homes, high-rise and multi-residential buildings, office buildings, etc., would be high priorities.

B.3 Operations Site Set-up

Once an area is identified with an active rescue, control of the area immediately surrounding the site will be established before rescue operations commence.

- An Operational Work Area is established to control access to the rescue work site except for assigned Task Force (TF) members and other local rescue personnel involved in an operation, and to provide safe and secure work areas for the personnel supporting the rescue operations.
- A Collapse/Hazard Zone is established to control access to the immediate area that could be affected or impacted by further building collapse, falling debris, or other hazardous situations (i.e., aftershocks). The only individuals that will be allowed within this area are the primary TF personnel directly involved in the search for or extrication of victims. All other TF personnel must be located outside the hot zone until assigned or rotated.

- When establishing the perimeter of the operational work area, the needs of the following areas will be properly identified:
 - o Access/Entry Routes (Personnel Accountability Location)
 - o Emergency Assembly Area

B.4 Incident Command System

When the Incident Command (IC) or Unified Command (UC) is designated, the Search and Rescue function will be placed under the umbrella of the response organizational structure considering all participating agencies.

B.5 Determine Search Areas

In most cases, the search area will be determined before teams from national and specialized services are deployed. In some cases, those teams will not be responsible for creating a master map, segmenting it, and identifying your priorities.

B.6 Master Map

When building a master map, you will need several different kinds of maps for information purposes. When intel and information comes in, you will plot the information on a main map so you have a clear understanding of how to move forward.

B.7 Search Segmentation

Search areas must be appropriately sized to achieve goals. Smaller segments that can be completed are better than larger segments that cannot be completed. The population density must be considered – some search segments are going to be very small if many people live in it. Segmentation assures complete coverage if segments are well defined with clear boundaries, because findings can be easily mapped and targets can be easily located in the field.

B.8 Search Priorities

Highest priorities should be assigned where the greatest good can be achieved. Every segment should have a priority attached to it starting at the top priority and ending with the lowest.

B.9 Ground

Ground search and rescue is the search for persons who are lost or in distress on land or inland waterways. Traditionally associated with wilderness zones, ground search and rescue services are increasingly required in urban and suburban areas to locate persons with special vulnerabilities.

B.10 Actions on Arrival at SRE Incident

SRE responders may arrive on scene during the initial response or at a developing search after some initial actions are in progress or have already taken place. SRE responders should have in the pre-plan actions to take when arriving to minimize response time. Items to consider include:

- Upon arrival at a developing search, leaders should check in with the current IC for briefing on actions taken so far, by whom, and what actions are currently being taken;
- Assign a staging area manager and set up staging area;
- Analyze mission and prioritize tasks; and
- Immediately after a SRE incident begins, plan for personnel relief (failure to relieve fatigued personnel could lead to critical errors in search operations and planning).

B.11 Initial Search Actions

The Incident Commander will need to plan and conduct a Rapid Search, which may include trackers, canines, and sound teams, as well as tasks such as perimeter patrols and trail checks as indicated by the situation and missing person profile developed.

- For searches where the Last Known Position/Place Last Seen (LKP/PLS) is a residence or structure, once personnel have been assigned to cover hazards, perform a thorough check of all buildings in the vicinity of the LKP/PLS to include attics, rafters, lofts, and basements of all structures, as well as tall grass areas, scrub, and wood lines around the perimeter of the property;

Establish confinement: Perimeter road patrols, if used, should strive for visual checks of roads/ditches in the area covered by Rapid Search at least once every 30 minutes;

- Perform trail checks or trail-running and have searchers scan the trails and environment/terrain to either side of trails;

- Keep one of several people available to follow up on intelligence sources or leads as they become available (Law enforcement personnel may be a good choice for this task);
- Send law enforcement personnel (if available) to check nearby businesses for the subject, and to gather additional intelligence, as well as check nearby homes;
- Consider sound searches;
- Tracking and sign cutting are important tasks during initial response and Rapid (Reflex/Hasty) Search Phase. As people walk, they will leave signs of their passage. Skilled tracker can acquire, age and follow signs. Trackers can work with canine teams without the two teams interfering with each other; and
- Canine resources may provide significant clues for the search.

B.12 During the Rapid Search Phase:

- Brief all field teams;
- Maintain confinement;
- Perform Rapid Search actions as called for by the mission profile;
- Debrief all returning teams;
- Record all efforts
- Analyze mission profile to prioritize Rapid Search tasks.

After all Rapid (Reflex/Hasty) Search resources have deployed to the field, the focus of activity in the command post should shift to the Communications and Situation functions, who will handle radio traffic, position and status reports from the field. While the Rapid Search is taking place, General Staff should begin planning for the next operational period.

ANNEX 2: Sector risk scenario

Scenario 1: Floods and storms

Floods and storms (rainstorms, thunderstorms and windstorms) are among the most devastating hazards causing a lot of casualties every year. Before during and after the incidents SRE are required to ensure safety, avoid and or alleviate the suffering. In the country context, the specified events are recurrent, and depend on both the climate features and the country physical status.

The table below highlights the risk scenario of floods and storms and the related needs for SRE

Type		Return period	Estimated need for SRE	Likelihood
Floods	Flash floods	2 to 4 months	High	Most likely
	River floods	1 to 3 months	High	Likely
	Plain floods	2 to 5 months	Medium	Likely
Storms	Thunderstorms	1 to 2 months	Very high	Likely
	Windstorms	1 to 2 months	Moderate	Less likely
	Rainstorms	2 to 4 months	High	Likely

Scenario 2: Earthquake, volcanic eruptions and landslides

The three geological risks are also recurrent in Rwanda and can threat lives of millions triggering need for organized response including for SRE. The three types of risks are not periodical, less frequent but are those, if they occur require intensive SRE interventions.

The table below summarized the estimated likelihood and relation to SRE potential need.

The table below summarized the scenario related to landslides, earthquake and volcanic eruptions

Type	Expected return period	Estimated need for SRE	Likelihood
Earthquake	Unpredictable/Random	Very High	Likely
Volcanic eruption	Changing but once every 15 to 20 years using 75 years data	Medium	Likely
Landslides	1-3 months	Very high	Most likely

Source: Contingency plan for Earthquakes 2019 (www.minema.gov.rw)

Scenario 3: Biological, technological and industrial disasters

An imminent risk of explosion and a highly contagious epidemic are example of manmade risks that can trigger SRE interventions. The table below provides additional details

Type	Expected return period	Estimated need for SRE	Likelihood
Fires and explosions	Random	High	Likely
Epidemic	Random	Moderate	Likely
Building collapse	Random	Very high	Likely

Source: National contingency plan for Fire incidents (www.minema.gov.rw)

Annex 3: Checklist to plan and execute SRE interventions

Essentially, the basic principles and theories of SRE are divided into organization, management, leadership, strategy, tactics, and clue awareness. These fundamentals, when used effectively and efficiently, will normally render successful SRE operations. The following table provides basic checklist data in Rwanda context, however, there are several key actions and decisions that must be made by SRE working group and deployed teams.

S/N	Phase	Checklist
1	Preparing the intervention	What is the imminent risks? What is the nature of the disaster incident? What is the estimated number of affected people requiring SRE? What are the physical conditions of the affected area? What is being done? By who? What is the priority? What is the primary, secondary and alternative source of information? What are the means of verification?
2	Interventions requirements	What type of intervention is required? What equipment? What manpower? Which qualifications? What methods to be used? What is the deadline to avoid useless interventions? What are the risks associated to the intervention?
3	Linking the SRE intervention with other support functions	What are the needs of rescued people? Who can provide them? Who to contact and who to do these contacts? What are the associated risks?