

NAMIBIAN DISASTER RISK REDUCTION SCHOOL MANUAL AND SYSTEM STRENGTHENING INITIATIVE

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ABSTRACT

The north and north-east areas of Namibia are prone to annual seasonal flooding. In 2009, the Namibian government declared a national emergency after the highest flood level in fifty years causing extensive damage to socio-economic infrastructures in the six northern regions. The floods had a severe impact on the education sector in Namibia affecting 328 schools and around 94,000 learners across the six regions.. Given the previous floods (2004, 2008, 2009) and droughts (2005,2006,2007) that have affected the region, climate variability trends and model changes in flood, drought and wild fire hazards could be of particular use to mitigate risk and future impacts from natural disasters. The 2010 recommendations of the education sector covered a range of initiatives to make education activities more resilient to disasters, of which one was to prepare for future emergencies by developing a school manual on emergency preparedness and response. A second combined initiative was to improve data management and information flow for hazard monitoring and modelling, early warning, and communication during a disaster.

The study included 3 weeks field work in the Caprivi and Kavango regions, to assess current disaster preparedness and response strategies, identify vulnerabilities in the communities and to determine how Disaster Risk Reduction (DRR) measures can best be implemented on the ground. Research showed that written emergency contingency plans were lacking in nearly all schools, and communication during disasters was an issue. The study deliverables included the School Manual on emergency preparedness and response, as well as risk reduction and contingency plan training material (including manuals, step-by-step guides, hazard maps, and reference material on CD) which was delivered in a training course to high-level Ministry of Education personnel from all 13 regions of Namibia. The intention was for these participants to pass on their training to education planners, circuit inspectors, advisory teachers and cluster centre principals throughout the country. The National Institute for Educational Development also plan to undertake a formal process to ensure that DRR is included in the formal school curriculum. The study deliverables for the system strengthening included a systems guideline for disaster preparedness and response. This involved processes and flows for regional offices and schools, including a system for monitoring and reporting, and recommendations on information use and flow. It also included the development of a disaster log database and user guide, sourcing and collation of many Namibian hazard mapping data sets, development of hazard maps, and training material for "training of trainers".

This paper details the findings of the Namibian study (both from the field and collated reference material), gives an overview of the key elements of the DRR school manual and training material, and describes the systems strengthening initiatives that were recommended and set up for implementation by the Ministry of Education.

BACKGROUND

The north and north-east areas of Namibia are prone to annual seasonal flooding. In 2009, the Namibian government declared a national emergency after the highest flood level in fifty years causing extensive damage to socio-economic infrastructures in the six northern regions. The disaster response in 2009 was characterised by poor coordination and lack of preparedness. The floods had a severe impact on the education sector in Namibia affecting 328 schools and around 94,000 learners across the six regions.

Following the 2009 Education for Sustainable Development (ESD) World Conference in Bonn, Switzerland a declaration was made specifying the potential for societies to address climate related disaster and resource access. This conference made reference to disaster prevention and mitigation as one of the key environmental dimensions for sustainable development.

Primary responsibility for developing and maintaining disaster risk management (DRM) in Namibia rests with the government. Since 1992, the Republic of Namibia has developed structures to deal with disaster risk management and has a national emergency management system in place as well as the National Policy for Disaster Risk Management in Namibia, launched in July 2008. All of these developments contribute towards the attainment of sustainable development in line with Namibia's Vision 2030 through strengthening of national capacities to reduce risks and to build resilience to disasters. The policy aligns itself with the global Hyogo Framework Action (2005-2015) (UN-ISDR, 2005), the Africa Regional Strategy for Disaster Risk Reduction, the SADC Disaster Preparedness Strategy Framework as well as other international conventions.

Given the previous floods (2004, 2008, 2009) and droughts (2005,2006,2007) that have affected the region, climate variability trends and model changes in flood, drought and wild fire hazards could be of particular use to mitigate risk and future impacts from natural disasters. The 2010 recommendations of the education sector covered a range of initiatives to make education activities more resilient to disasters, of which one was to prepare for future emergencies by developing a school manual on emergency preparedness and response. A second combined initiative was to improve data management and information flow for hazard monitoring and modelling, early warning, and communication during a disaster.

FIELD SURVEY

The study included 3 weeks field work in the Caprivi and Kavango. These regions were identified as pilot sites for the manual, to assess current disaster preparedness and response strategies, identify vulnerabilities in the communities and to determine how Disaster Risk Reduction (DRR) measures can best be implemented on the ground. Interviewed stakeholders were selected based on the role they play in disaster risk reduction and education in the schools (see **Table 1**).

Table 1 Interviewed stakeholders

Ministry	Department / Portfolio
Regional Council	Acting Chief Regional Council
	Regional Disaster Risk Management Committee (RDRMC)
	National Planning Commission – GIS Unit
Traditional Authorities	Traditional Authority Court (Khuta)
Ministry of Education	Director and Deputy Director of Education
	Education Planners
	Advisory Teachers
	Circuit Inspectors
	Principals

Ministry	Department / Portfolio
	Teachers (Lower Primary, Life Skills, Social Studies and Geography)
	School boards (Community representatives)
	Learners
Ministry of Safety and Security	Namibian Police
Ministry of Health	Regional Health Inspectors
	Clinics
Ministry of Gender Equality and Child Welfare	Employees
Ministry of Agriculture, Water and Forestry	Department of Extensions – food security
	Department of Water Affairs – hydrology division
	Namibian Water
Namibian Broadcasting Corporation	Silozi Radio Service

Interviewees were also questioned regarding challenges and recommendations in the context of DRR. Their response is summarised in **Table 2**, listed per main topic of the DRR Manual (Umvoto, 2010a).

Table 2 Pre-Test Results

ID	Main Topics of DRR Manual	Collated Results Overview
1	Coping Capacity	<p>Banana boats available from regional Council and to some effected schools, although not all schools and often not enough.</p> <p>Relocation centre schools share resources with relocated schools e.g. extra tables, staff room, photocopying.</p> <p>Water testing kits are used at the relocation camps – people trained on how to use. Committees at relocation camps are put up on WASH to manage the camp.</p>
2	Vulnerability	<p>The banana boats are difficult to use especially when it is windy and boaters are sometimes attacked by hippos. These cause boat to capsize, although no deaths have been reported at the schools interviewed.</p> <p>Communication is inhibited by lack of cell phone coverage, particularly during floods, and schools have no landline phones.</p> <p>Learners and communities are housed in tents in the relocation centres (schools within the school grounds of the hosting community). Some spend up to 7 months in the camps.</p> <p>Teaching and learning is not always good quality as it happens in the tents, which are either very hot or very cold and very dusty.</p> <p>Relocation structures have no electricity which hinders evening classes. The electrified classrooms are not shared by the hosting school.</p> <p>Housing for teachers is lacking and during an emergency they do not receive relief support, e.g. food packages.</p> <p>Clean water and sanitation provided after people have relocated to camps.</p> <p>Diarrhea and coughing increase during floods and burns are common amongst children.</p> <p>Influenza is exacerbated when people are living in close proximity to each other in the camps.</p>
3	Main Hazards	<p>Floods</p> <p>Drought</p> <p>Lack of ceilings</p>

ID	Main Topics of DRR Manual	Collated Results Overview
		<p>Wild animals including elephants, snakes, hippos, crocodiles and buffalos</p> <p>Traffic accidents, especially with cattle at night</p> <p>Field fires</p> <p>Health :</p> <p>Emerging and Re-emerging diseases e.g. cholera – campaigns and information is given; malaria – control program undertaken prior to rainfall season.</p> <p>Outbreaks of meningitis and cerebral malaria were identified as health related problems</p> <p>Diarrhea</p> <p>Contaminated water become a problem during the floods</p>
4	Preparedness	<p>During emergencies, learners receive safety advice from principals and teachers during assembly and in classes.</p> <p>Clinics receive additional medication supplies prior to floods.</p> <p>Regional Council has a draft contingency plan, and other stakeholders have drafted theirs that inform the Regional Council one.</p> <p>RDRMC meet every week since 2008 floods.</p> <p>Campaigns have been done to show people how to evacuate to the main land and training provided for people to use banana boats.</p> <p>Flood awareness campaign was done in March 2010 initiated by the Regional Council for areas likely to be affected by the flood.</p> <p>Follow-up campaigns in April and June 2010 (during the flood) were undertaken with Red Cross, Ministry of Gender and Ministry of Health.</p>
5	Response	<p>Lack of resources and man-power hinder quick response</p> <p>Red Cross one of the first to respond as they have volunteers and staff on standby 24 hours</p> <p>Regional Council responds quickly when they have resources</p> <p>Additional medical personnel required especially at relocation camps</p> <p>Feeding programme has not been sufficient</p> <p>Response from Ministry of Health was good on the outbreak of H1N1 virus.</p> <p>At times there are delays in returning back of school equipment due to lack of transport.</p> <p>People do not respond to early warnings and resist evacuation:</p> <p>They want to see the area flooded before they move.</p> <p>Cattle owners resist evacuation</p> <p>Afraid of loss to property due to theft</p> <p>If they relocate, some go back early, especially men as they worry about their property (they do not wait for government to approve areas safe and for transport to be provided. Some have been involved in accidents as they walk back). Women tend to stay at the relocation camps with children</p> <p>The Rundu police have a call-centre (+264 66 266 300) for requesting assistance or to report problems</p>
6	Protection	<p>Teachers trained on counseling and work with social workers from the Ministry of Gender at the relocation centres.</p> <p>No reports of sexual abuse and rape have been received at schools or camps, though this doesn't mean they do not occur, as people are afraid to report.</p> <p>There is an increase in childbirths soon after communities have returned to their villages, especially young girls.</p> <p>It was found that it's better for the learners to stay with the rest of the community after school as home service resources were found to be</p>

ID	Main Topics of DRR Manual	Collated Results Overview
		<p>lacking.</p> <p>Home service – service for learners staying far from school, distance could be about 15 km.</p> <p>Learners stay in tents or old teacher's houses and in need of repair permanent structures. Few schools have hostels, but these are also not sufficient</p> <p>Youngest child about 6 years old, in these cases as older sibling would be at home service as well.</p> <p>In some schools teachers staying in school grounds provide parental supervision after school hours), however in some schools the supervision is not provided</p> <p>Connecting and uniting families between Angola and Namibia is extra difficult during emergencies.</p> <p>Provision of play-toolboxes and activities for out of school children as well as after school activities are done by NGOs e.g. DAPP but more support is required.</p>
8	Permanent Relocation	<p>Do not want to permanently relocate because of:</p> <p>Securing land rights difficult</p> <p>Lack of drinking water for people and animals</p> <p>Floodplain good for grazing land, cultivation and fishing</p> <p>Far from schools and don't want to leave ancestral land behind</p> <p>Have no money to build houses in highlands; young people relocate easy as they have money.</p>
9	Recommendations	<p>Government to build permanent infrastructure e.g. water tanks and sanitation, at the relocation camps.</p> <p>Provision of prefabs for classes instead of tents.</p> <p>People have two permanent house structures, one at flood-affected area (cultivation and grazing) and one at higher grounds (Khuta organizing land access).</p> <p>All stakeholders speak in one voice instead of working with cross-purposes.</p> <p>Research showed that written emergency contingency plans were lacking in nearly all schools.</p> <p>Communication during disasters is a big issue.</p>
10	Development of DRR Manual	<p>Various possibilities discussed for the uptake of the manual for inclusion in the formal school curriculum in the subjects of life skills, social studies and geography.</p> <p>Structure and content to include development of contingency plans, activities for learners.</p> <p>The learners were keen to receive more training on DRR and to be the agents of communication to their parents and community.</p> <p>The communication and support network for teachers was defined.</p>

Figure 1 shows learners sitting on one of their school's "Banana Boats" that are used to get to school and back during the floods.



Figure 1 Learners on a "Banana Boat"

Figure 2 Illustrates the home service. Most learners stay in tents as depicted on the left. Only a few schools have limited hostels available (shown on the right).



Figure 2 Illustrations of the Home Service, provided for Learner accommodation during the week

SCHOOL MANUAL ON EMERGENCY PREPAREDNESS AND RESPONSE

The School Manual on Emergency Preparedness and Response was developed as part of this study (UNICEF Namibia, 2010a). The target audience for the manual is education personnel, and in particular teachers. It promotes the school as a vital tool to reduce disaster risk in society. The manual is designed to be a generic introduction for teachers on emergency preparedness and response, and encourages a culture of safety and resilience through initiatives involving learners in and out of schools, thereby empowering them to be active agents of change for disaster risk reduction.

The aspects covered include:

1. Overview of Disaster Management

The section of the manual presented the various concepts and terms used in Disaster management. This included a description of disaster management, what it is about and how it can be achieved through the following concepts:

Disaster Management cycle:

- Mitigation
- Preparedness
- Response
- Recovery

Disasters management is achieved through a framework of Disaster Risk Reduction, which involves (UN/ISDR, 2004):

- Build Capacity and Foster Political Will
- Risk Assessment and Analysis
- Raise Awareness and Build Knowledge
- Reduce underlying Vulnerability and Increase Coping Capacity
- Preparedness and Emergency Response
- Recovery and Rehabilitation

The objectives of DRR in education include:

- Seeking political commitment through DRR integration in education curriculum, school construction and education sector plans
- Promoting the integration of DRR into non-formal education and extra-curricular activities and recognizing the importance of traditional and indigenous knowledge
- Highlighting the role and contribution of learners, local communities, women, and local authorities while working with other partners (NGOs, national societies) in the educational process
- Recognizing the special needs of vulnerable groups including disabled learners
- Identifying good practices and national “champions” when it comes to integrating disaster risk reduction into school curricula and developing school safety programs

The section further gave a description of the key performance areas of the National Disaster Risk Policy in Namibia, which can be summarised as follows:

1. Establish sound and integrated legal and institutional capacity for total disaster risk management
2. Improve disaster risk identification, assessment and evaluation mechanisms
3. Reduce the underlying risk and vulnerability factor by improving risk management applications at all levels
4. Strengthen disaster risk preparedness for effective emergency response and recovery practices at all levels

5. Enhance information and knowledge management for disaster risk management.

On a continuous basis, the policy aims to manage disaster risks holistically. It also aims to reduce the impact of disaster, increase resilience, and minimize vulnerabilities. It strives to involve all segments of society especially those most exposed to anticipated hazards. The fulfillment of the policy requires full participation and ownership from all stakeholders. It also requires capacity development as a prerequisite to successful DRR.

Schools should be promoted as community centers for DRR awareness and safety culture mobilization. This can be accomplished through organization and promotion of initiatives among learners in and out of schools making them agents of change for DRR in their communities.

2. Risk Assessment and Early Warning

Risk Assessment is the analysis of:

- Exposure to a particular hazard
- Vulnerability of the community facing the hazard
- Their ability to cope with its impact

These elements are captured in the UN/ISDR equation shown below.

$$\textit{Disaster Risk} = \textit{Hazard} \times \textit{Vulnerability} / \textit{Coping Capacity}$$

A combination of factors have contributed to the vulnerability of communities in Namibia and hindered the ability of households to cope with disaster, hazard and disaster risk. They are:

- Increased morbidity and mortality levels due to HIV/ AIDS
- Deepening food insecurity
- Economic shocks and the erosion of household assets
- Hazards such as floods, drought and desertification which interrupt development
- Disparities in infrastructure development especially between urban and rural areas
- Unequal access to quality education, health services and employment opportunities between rural and urban areas
- There are challenges facing schools and other national institutions when it comes to contingency planning and effectively providing adequate social services

These factors exacerbate poverty, increase the need for expenditure on social services rather than development, lower education status and increase livelihood risk. Furthermore, resources intended for development have to be diverted to disaster response, which in-turn delays development programs (National Disaster Risk Management Policy, Namibia, 2008).

If the local community is actively involved in the risk assessment process, it provides an opportunity to raise their awareness about potential hazards. Some of these hazards may be familiar, others may not even be perceived.

It is important that learners are aware of all hazards facing the community because:

- They are important agents for improving safety and resilience
- The knowledge will protect them in the event of an emergency

Information on hazards and the physical, social, economic and environmental vulnerabilities to disaster should be followed by action taken on the basis of that knowledge. Knowledge of the risk faced by communities and technical monitoring of hazards is used to develop a warning service for these risks.

Understandable warnings can then be disseminated to those at risk. If communities understand the warnings they receive and act upon them accordingly. The worst impacts, in event of an emergency or disaster, can therefore be mitigated.

The Regional Disaster Risk Management Council (RDRMC) was established to coordinate response to emergencies at a regional level. During an emergency, the RDRMC appoints a focal point person to coordinate activities and lead the assessment task team. The assessment task team is responsible for undertaking field assessments at the onset of the disaster, during, and after the disaster, and to report back to the committee.

If the RDRMC receives early warning information, field assessments of potential areas to be affected are completed. Based on the findings, evacuation plans and warnings are given to the community. The RDRMC informs the local leadership, who are then responsible for informing the affected people. The Governor makes use of media such as community radio to inform the community.

The process followed by the schools begins with the school inspector requesting information on contingency plans from known affected schools or relocation centres via the Cluster Centre Principal. The school principal then calls a school board meeting to outline the plan of action:

- If the school is to relocate, the relocation place and dates for moving are discussed
- If the school is a potential relocation centre, the number of schools that could be accommodated and resources that could be provided are discussed

The school board then informs the traditional authorities of the decision and the headman and / or the school board informs the community. In this meeting, resources that will be needed for evacuation or for hosting a community are included in the discussions. The information is then passed to the inspector, up the chain of command, until it reaches the RDRMC, or directly from the principal to RDRMC in an emergency.

3. Emergency Preparedness and Response

The task of communicating risk information relies upon effective risk assessment and analysis. It is closely linked with such activities as:

- Assessing capacities
- Developing a program to raise awareness
- Improving the dissemination of information
- Strengthening early warning systems and the appropriate responses

Emergency preparedness comprises all these activities and more specifically the preparedness for response in the event of an emergency. It involves initiating activities that will help a school and community to be ready for taking appropriate actions to avoid unnecessary, or the worst impacts of a hazard. The emergencies one prepares for, depends on which risks are perceived, or measured, to be the most frequent and/or the highest. This is often, but not always, based on the results of hazard and risk mapping. Dealing proactively with identified risks results in increased community resilience, and a capacity to overcome impacts on the household, school or community.

Once the political will and institutional capacity is in place it is possible to initiate preparedness activities. An important element of preparedness for an emergency is the preparation of a detailed contingency plan for each level of early warning as well as the actual emergency event. A contingency plan is a document that sets out an organised and coordinated course of action to be followed in the event of a hazard, identifying who does what, how, and when. Plans should also consider how to deal with immediate and

longer-term hazards following an emergency (often experienced as secondary and tertiary impacts e.g. sickness from contaminated water, food shortages escalating to famine).

The Namibia National Education Contingency Plan was developed by the Ministry of Education (MoE) in January 2009 and forms part of the National Contingency Plan for all sectors; Objectives are to:

- Ensure safety, security, physical and psycho-social well-being of all learners and teachers before, during and after the emergency
- Maintain safety of physical infrastructure (schools), access roads, etc
- Minimize disruption of learning activities due to disaster (e.g. access to schools)
- Protect learning materials

The MoE Contingency Plan includes the following activities to prepare for an emergency:

1. Risk mapping for schools and qualitative analysis of physical infrastructure
2. Simulation exercises
3. Positioning of learning and emergency materials
4. Community and teacher sensitisation on early warning
5. Establishing clear communication channels through infrastructure and other means so that educators can communicate with all other sectors and vice versa
6. Dissemination of the Minimum Standards for Education in Emergencies
7. Development of a school manual on emergency preparedness and response
8. Development of guidelines on camping at schools

Schools need emergency response plans in place, ensuring that all staff and students are aware of them. Teachers should participate in developing the Contingency Plan and in emergency preparedness training. Teachers must provide instructions to learners on emergency preparedness and should practice survival techniques appropriate to each grade level. Teachers should provide continuous leadership training and activities to bolster confidence and enhance the abilities of learners to care for themselves and to help others during an emergency.

School boards and parent-teacher committees are the governance and management mechanisms through which links and accountability to the community are manifested. The school board and parent-teacher committee can:

- Mobilize parents, learners, local community and education staff to champion school safety
- Prepare and implement school safety plans (i.e. measures taken within school premises and within the immediate neighbourhood; this must include regular safety drills)
- Promote active dialogue and exchange between schools and local leaders including police, civil defence, fire safety, search and rescue, medical and other emergency service providers
- School boards can assist over-burdened teachers in a number of ways, many of which can be considered in contingency planning.

Although the field study may have found there is a clear line of communication between the school, school board and traditional authority / community, there is often a lack of documentation of the processes and plans agreed upon. It is suggested that a standing committee for School Emergency and Disaster Preparedness is appointed on each school board, and that contingency plans form part of the school development plans and are a standing item in the agenda of the School board meetings. Schools could in this way be sensitive to the communities they serve and be held accountable in their governance and management for DRR.

SYSTEM STRENGTHENING INITIATIVES

Following discussions with stakeholders and the field study, it was found that the most crucial parts of the DRR system that required particular focus were:

1. The availability and collation of data for use in risk mapping, and
2. The process for communications during a disaster.

Risk Mapping

The study team undertook a large data collation exercise from various stakeholders within Namibia and also internationally. This data included Namibian infrastructure (such as road, rail) and schools, as well as information identifying specific risks areas such as floods, drought, people diseases, animal diseases, etc. The data was mapped in GIS and the risk map data sets copied to DVD and distributed to all the regions. In addition, the risk maps were printed in A0 poster size and laminated for distribution to each region.

Communication prior to and during Disasters

The communication process was defined through flow charts included in a systems guideline for disaster preparedness and responses (UNICEF Namibia, 2010b). This involved processes and flows for regional offices and schools, including a system for monitoring and reporting, and recommendations on information use and flow. The communication flow between the Regional Disaster Risk Management Committee (RDRMC), the schools, and the community at large is represented in **Figure 3** below.

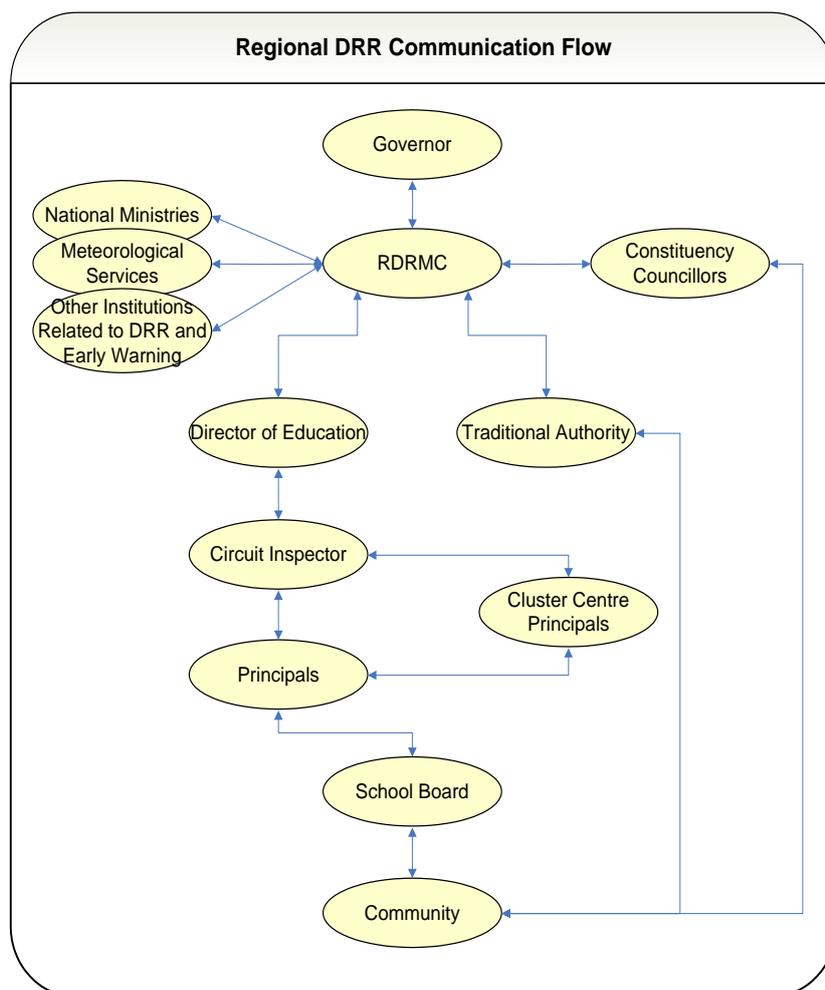


Figure 3 Regional DRR Communication Flow

Table 3 shows a responsibility table for Disaster Risk Reduction tasks assigned to the Regional Disaster Risk Management Committee (RDRMC). **Table 4** shows a responsibility table for Disaster Risk Reduction tasks assigned to the School Principal.

Table 3 RDRMC Responsibilities Table

Responsibility Area	Responsibility Task Summary
Disaster Preparedness	Development, Update and Communication of Regional Contingency Plan
	Ensuring that schools have active School Contingency Plans
DRR Training	Ensuring that the DRR training is cascaded through all levels to school principals and teachers
Disaster Log Database	Ownership, maintenance and active use of the Disaster Log Database
Early Warning	Receipt of Early Warning Event Trigger
	Assessment of Early Warning Risk Level (red, orange, yellow)
	Development of recommended mitigation actions
	Dissemination of Early Warning information
Disaster Response	Recommendations for response actions once a Disaster has been Declared
	Receipt of provision requests from schools, assignment of actions, and final ownership of actions being completed (including regular follow up)
Monitoring and Evaluation	M&E during disasters, particularly regarding response to school provision requests
	M&E following disasters resulting in a report with recommended improvements to systems and processes

Table 4 School Principal Responsibilities Table

Responsibility Area	Responsibility Task Summary
Disaster Preparedness	Development, Update and Communication of School Contingency Plan
	Ensure that the school continually has enough disaster provisions (e.g. Food, Shelter, Blankets, Boats, Medicine, Learning Material)
DRR Training	Ensuring that the DRR training has been received by school principal and teachers
	Ensuring that DRR training forms a part of the lessons taught by teachers to the learners
Early Warning	Upon receipt of Early Warning notification, undertake the recommended actions and further disseminate the information to teachers, learners, and the school board.
	Upon receipt of Disaster Declared notification, undertake the recommended actions, implement contingency plans, and further disseminate the information to teachers, learners, the school board, and community.
Disaster Response	Regularly update the RDRMC on status.
	Regularly re-asses emergency provisions and send requests for more when required.
	Regularly liaise with Cluster Centre Principal and Circuit Inspector.

A Disaster Log Database (and associated user guide) was developed to facilitate the communication process between schools and regional centre (UNICEF Namibia, 2010c). The database stores relevant information on the schools from the school census data, including location and contact information. The spatial mapping of schools using the GIS risk maps meant that data could be included in the database on the level of risk at each school from various hazards. This is useful for contingency planning and early warning. During an early warning or disaster, the database is designed to assist in identification of the affected schools in the hazard area. There is a central point with all relevant school contact information. There is also a system to log all communication between the school and the regional centre including requests for assistance. These are tracked and statistics reported.

TRAINING WORKSHOP FOR REGIONAL STAKEHOLDERS

The Level 1 DRR Training workshop was held between the 30 November and 2 December 2010 in Windhoek. It was facilitated by UNICEF/UNESCO and project team (Umvoto Africa), in collaboration with the Ministry of Education and NIED. There were participants from all thirteen regions of Namibia, represented by Education Planners and Inspectors from the Ministry of Education and the Deputy Director from Caprivi. In addition, there were members of NIED and the EMIS team on select days.

The outcomes of the workshop were to:

- Strengthen capacity for disaster preparedness in the education sector
- Develop recommendations for improvements to feed into local, regional and national disaster risk contingency plans

Participants were enabled to:

- Apply knowledge and skills in technical components of education in emergency preparedness and response
- Implement action plans for preparedness and contingency planning at school level
- Establish a culture of disaster risk reduction and knowledge management thereof in Namibia
- Cascade the training to regional level for the implementation of the manual

Participants received material on:

- The School Manual on Emergency Preparedness and Response
- The Guideline on Emergency Preparedness and Response
- The Disaster Log Database User Guide
- DRR Powerpoint Presentation Material
- Step by step guide for performing risk assessments
- Step by step guide for creating a contingency plan
- Reference manual for material and examples of contingency plans
- Two A1 laminated hazard maps per region
- CD of additional DRR reference material
- DVD of geo-spatial data for hazard mapping; additional electronic hazard maps, and the Disaster Log Database
- Additional hard copy material, such as the booklet on Minimum Standards of Education in an Emergency

Many recommendations followed from the training workshop including how best to cascade the training, and how to best implement various aspects of the training such as the early warning system and contingency plans.

WAY FORWARD

School Manual on Emergency Preparedness and Response

The School Manual on Emergency Preparedness and Response has undergone format editing into booklets, ready for printing and distribution throughout all regions and all schools in Namibia. It is expected to be used as a reference manual for principals and teachers, along with the cascaded DRR training, in order to assist them in disaster preparedness at their school, as well as to enhance the extra-curriculum education taught at schools.

Cascading of DRR Training

The DRR Training workshop held between the 30 November and 2 December 2010 to representative Education Planners and Inspectors was Level 1 in the Training of Trainers Cascade model. Further cascading of training to Level 2 and Level 3 for all regions in Namibia was planned via the model shown in **Figure 4**, as was discussed and agreed at the Stakeholder Review (Umvoto, 2010b).

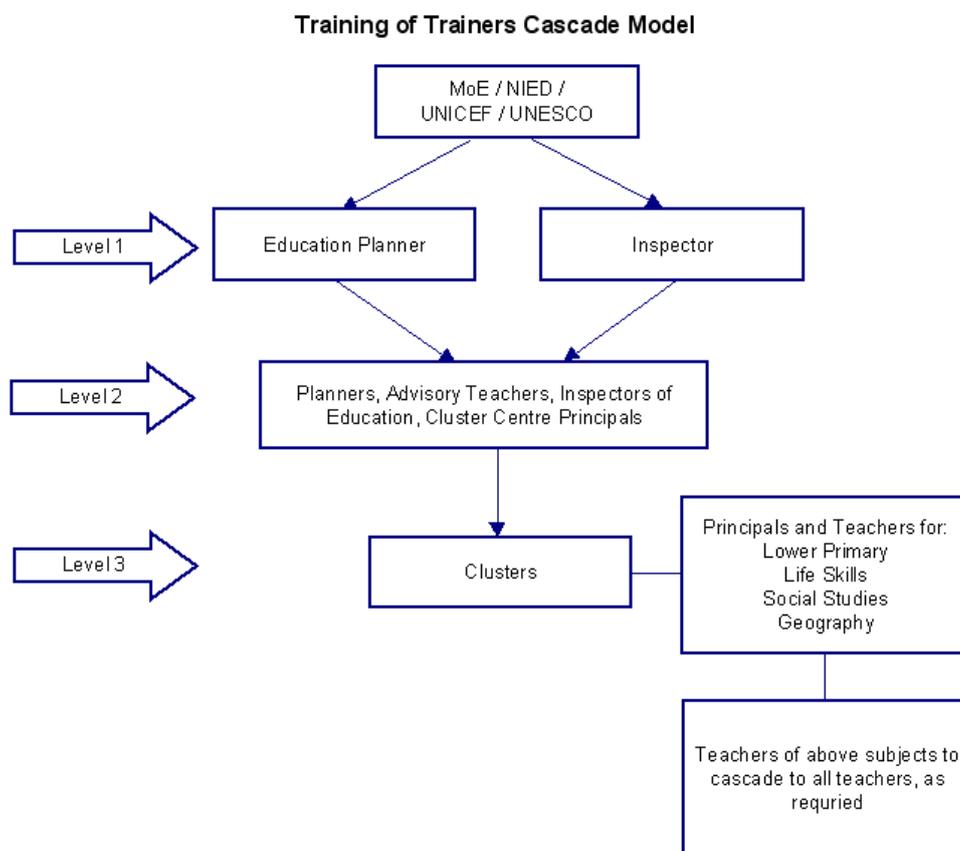


Figure 4 Training of Trainers Cascade Model

The Level 1 training was given to two representatives from each region in the country, generally one Education Planner and one Inspector. These portfolios are responsible for planning, training, monitoring and evaluation of education activities in the regions.

In Level 2, the training is given to the rest of the Education Planners, Circuit Inspectors, Works Inspectors, Advisory Teachers and Cluster Centre Principals. The inclusion of Works and Health Inspectors is to enable them to support schools in developing their emergency preparedness and response plans. All Advisory Teachers will need to be trained, as they would need to assist with Level 3 training.

Level 3 is to be implemented at Cluster level, with a focus on the specific subject teachers and principals. The schedule for the training at Cluster level has to take into account that there is one Inspector and two

Advisory Teachers for each circuit and they have to support the Cluster Centre Principals in the training. Hence how long training in each circuit will take is dependent on how long the training is and how many clusters can be grouped.

Integration of DRR into the Curriculum

The interviewed principals and teachers welcomed the idea of integrating DRR formally into the school curriculum. The experience gained from the introduction of Life Skills as a non-promotional subject in schools supports the notion that DRR will not be taught unless it is aligned with the curriculum and subject for examination.

This gives the motivation for the team proposing that specific subjects to teach DRR and clear channels are developed in order for it to be taken into the education system hence the suggested modes are:

- Lower Primary (integrated by class teacher into all subjects)
- Life Skills, (Grade 4 – 10)
- Social Studies (Grade 5 – 7)
- Geography (Grade 8 – 10)

The above-mentioned subjects support the aim of the manual being taught to learners from Grade 1 to 10. The subjects were chosen because DRR can be split into two aspects:

- Scientific aspect, which looks at the causes of disasters e.g. different types of hazards, data analysis and early warning systems. This aspect is to be taught in Social Studies and Geography.
- Practical aspect, which looks at day-to-day activities individuals and communities, can undertake to mitigate and prepare for disasters. This aspect is to be taught in Life Skills.

However, as Namibia has adopted Thematic Approach methodology to teaching, the proposed implementation does not limit other subject teachers from including DRR concepts in their teaching throughout the curriculum.

Options for Upgrading the Technical ICT System

The process flowcharts for early warning and disaster related communication between school principals and the RDRMC is well documented in the Emergency Preparedness and Response Guideline, and the training on this is being cascaded at regional level. The system, however, assumes that the communication method is either verbal, telephonic or by SMS. This system could be replaced, however, by a more complex technical system, such as sending out Early Warning messages by SMS to school principals automatically, from a computer that generates multiple SMS messages at the same time.

Upgrade, Ownership and Maintenance of System Strengthening Database

Currently, there is a table of school data in the database that is based on data downloaded from the school census database. This table will either require regular update from the school census data, or a better option would be to link it directly to the school census or EMIS data.

It would also be helpful to change the platform of the database from Microsoft Access to an internet-based platform. This would enable it to be centrally managed, maintained, and hosted, but to be accessible from various regional locations.

Implementation, maintenance and ownership of the Disaster Log Database, GIS hazard maps and GIS data falls under the Ministry of Education EMIS team. This set-up was discussed and agreed during the training workshop. Further discussions are underway between UNICEF and UNESCO and the Ministry of Education.

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