Kenya Red Cross Society: Opportunities and Capacity Building in Use of ICT in Disaster Management

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Abstract

The Kenya Red Cross Society (KRCS) has been at the forefront in disaster management in Kenya. In the recent past, the society has diversified and invested in the use of modern information communication technologies in addressing disasters. This paper therefore sought to explore the opportunities and capacity building in ICT by Kenya Red Cross Society (KRCS) for disaster management. Key informant interviews, structured interviews and secondary data analysis (content analysis) were the sources of information used. The results indicated that KRCS has received support from the Kenya Data Network, and networked its three regional offices out of eight regions. Plans were also underway to complete the networking of other regional offices to enhance the use ICT in disaster management and general administration. The Kenya Red Cross Society had established the EOC in Nairobi, and build capacity in three regions to use ICT for disaster management. The study recommends that a further research be carried out on the Capacity of local institutions in use of ICT in disaster management.

Key words: Kenya Red Cross Society, Opportunities, Capacity Building, ICT, Disaster Management.

1. Introduction

Disasters, whether natural or man-made, wreck havoc in the lives of millions of people around the globe. Their aftermath is nothing but a grim picture of death, destruction and suffering. It is not always possible to avoid disaster, but the suffering can be minimized through appropriate disaster management tools. The recent disasters such as the Indian Ocean Tsunami in December 2004 have drawn popular attention to the life saving role of modern technology. For instance, technologies such as mobile telephony can help reduce the impact of a disaster on lives. In Kenya drought, famine, landslides, fires and other disasters have cost the government more than US \$1billion in rescue and recovery, including adverse losses of human and animal lives and destruction of infrastructure (GoK, 1996:97).

 Disaster response initiatives have been ad hoc, uncoordinated and short-term measures mainly in the form of emergency relief services in the most affected areas. Major challenges have been lack of disaster preparedness which has remained one of Kenya's perennial development challenges for many decades. This has mainly been as a result of, apart from other factors, non-utilization of ICT in disaster preparedness, mitigation and reduction. Yet the dynamic nature of an emergency situation calls for timely updating of a variety of required data needed for managing the disaster situations. ICT is gradually emerging as a cornerstone of early warning systems, proving to be the backbone of emergency responses to disasters using various telecommunication facilities. It is therefore necessary to investigate the relevance of ICT in disaster management activities including disaster preparedness and response by KRCS.

In Kenya, monitoring and forecasting of urban fires, especially in Nairobi is very weak. Stakeholders have noted that monitoring by KRCS butterfly surveillance cameras exist (GoK 2009). This paper therefore aims to explore the capacity of KRCS to use ICT in disaster management. The focus was an assessment of the society's capacity in ICT infrastructure and use of ICT in disaster management.

1.1 Diffusion of Innovation Process

We are constantly confronted with innovation, new technologies, new ideas, new fads and fashions and new standards of behavior. Mass communication studies have evolved theories of diffusion of innovations. Rogers (1995) points out that a 1945 study by Ryan and Gross at Iowa State University provided the genesis of modern diffusion research. Diffusion of innovations according to McQuial (2005) is the process of domesticating technological innovations within a given population, often on the basis of advertising or general publicity. It can be an unintended or intended effect. Here the messages being communicated are concerned with new ideas. Communication is defined by Wilbur Schramm (MaQuail, 2005) as sharing of information. According to Harold Lasswell, it is an idea or an attitude where there are elements of who says what, to whom, and with what effect (Tan Alexis, 1986).

An innovation can be something borrowed from another society or it can be an invention. Invention is the process by which an individual or group makes use of elements that already exist in the culture, putting them together into some new pattern. When many individuals decide to adopt the invention and it comes into common use in a society, we say that diffusion of the innovation has occurred. Rogers (1995) defines an innovation as an idea, practice or object that is perceived as new by an individual. It refers to a new technology or idea.

Innovation spreads through various channels to the population. In order to spread through a society, an innovation must be taken up or adopted by individuals. Rogers (1995) explains that the process of adoption occurs in five stages:

1) **Awareness stage**: the individual learns of the existence of the new item, but lacks detailed information about it.

2) **Interest stage**: the individual develops an interest in the innovation and seeks additional information about it.

3) **Evaluation stage**: the individual mentally applies the new item to his or her present and expected future situation and decides whether to try it.

4) **Trial stage**: the individual applies the new idea on a small scale to determine its utility.

5) **Adoption stage**: the individual uses the new item or idea continuously on a full scale.

Innovations are adopted by individuals through a communication channel which is the means by which messages get from one individual to another.

There is always a lapse of time between first learning and decision to adopt a new innovation. News of a vital event spreads quickly to reach a high percentage of the population. The diffusion of information is determined by the level of people's interest where reports of obscure events of little inherent interest diffuse slowly and reach only a few people; the amount of attention that the media give to the event, for example, repetitions of messages. DeFleur and Larsen (1987) predicted that stimulus intensity-defined as the repetition of a message increases the percentage of a population that receives the information hence they concluded that repetition can help diffuse the message; rate of adoption of the innovation by the population, that is, members of a social system (set of interrelated units engaged in a joined problem-solving to accomplish a common goal); that is the person to person communication.

In this study, ICT is the new invention. It is the source of information. Individuals who have knowledge about the innovation act as the media of connectivity to new individuals who have no idea about the innovation.

2. Materials and Methods

The study employed the use key informant interviews, structured interviews and secondary data analysis (content analysis) in its data collection. The author interviewed key informants mainly from the Kenya Red Cross Society. Purposive sampling was used to select Kenya Red Cross society for this study due to its participation in ICT based disaster management. Various people working in the organization were interviewed.

The author also analyzed the KRCS newsletters and reports to provide more information about the society on disasters and ICT. Web browsing too was used for additional information on ICT and disasters. Most of the websites referred to in this paper are those of institutions dealing with disaster management. Content analysis was used in data analysis.

3. Findings and Discussion
3.1 Red Cross Movement

National Red Cross and Red Crescent Societies including the Kenya Red Cross embody the work and principles of the International Red Cross and Red Crescent Movement worldwide. National Societies act as auxiliaries to the public authorities of their own countries in the humanitarian fields and provide a range of services including disaster relief, health and social programmes. During wartime, National Societies assist the affected civilian

population and support the army medical services where appropriate. National Societies cover almost every country in the world. Together they have 105 million volunteers and 300,000 employees, who provide assistance to some 233 million beneficiaries each year.

3.2 Status of ICT at Kenya Red Cross

In 2008, KRCS website was redesigned to reflect the new face and other developments relevant to disaster management. From the study findings, Intranet had been developed and was soon to be launched to enable the sharing of common internal documents.

With support from the Kenya Data Network, three regional offices were networked (West Kenya, North Rift and South Rift) and were part of KRCS wide area network in addition to Coast and North Eastern regional offices. This enabled deployment of mail services, antivirus solution and Navision system to the regional offices. Plans were underway to network other regional offices.

In 2008, Kenya Red Cross invested in Emergency Operations Centre (EOC), which doubled up as the Disaster Management and Training Centre. The EOC incorporates the integration of real-time streaming media and web portals to detect and alert on earthquakes, traffic, and weather in disaster-prone sites. This information is then relayed to the Red Cross Action Team leaders on the ground using the Short Messaging Service (SMS) and email that is made possible using the GSM Wireless Data Technology.

Communities in disaster-prone areas such as Kwale, Kilifi, Mombasa, Lamu, Tana River, Machakos, Nairobi and Nyando had initiated small-scale disaster mitigation projects. This was made possible through the use of vulnerability and capacities assessment (VCA) tools, developed by IFRC, to design and implement relevant, community-owned and sustainable risk reduction micro-projects.

The National Society engaged partners at different levels of disaster preparedness, including the Government, UN agencies, national and local organisations to help raise the profile of disaster preparedness in Kenya.

Mombasa, Kwale, Kilifi, Lamu, and Nyando branches installed VHF (Very High Frequency) and HF (High Frequency) radio base stations as part of the early warning system. The radio network was linked with the Society's Headquarters in Nairobi, which received and transmitted information directly from the Emergency Operations Centre and other national and regional disaster monitoring agencies.

By 2007, Kenya Red Cross Society had installed structured network at the headquarters and Regional Office to support voice and data. The two offices were interlinked with improved information sharing. KRCS Installed a new PABX system with VOIP capabilities enabled additional extension connection with improved voice transfer. An upgraded bandwidth to Access Kenya from 128kbps up-down to current 1mbps up and 152 down was also put in place. This has eased information exchange and faster internet access.

A Navision System was set up at the Coast Regional office and expanded to include human resource module. This was meant to improve financial and HR reports. KRCS Installed FVHF repeater stations in Nyanza-Kisumu, Coast-Mombasa, Tana River, Garissa and Marsabit and Headquarters. This has improved communication, as well as drastically reduced the cost of communication. The IT unit also installed new HF radio system in Nyanza-Kisumu, Marsabit and Tana River for improved radio communication between Region-Region and Region-Headquarters. An HF and VHF in the mobile units were also set up to improve tracking communication. The IT unit also supported the maintenance of all computers and workstations at the Headquarters, Regions and Branches.

3.3 ICT and Disaster Management in Kenya

According to the Government of Kenya's (GoK) draft proposal on national disaster management programme, disaster preparedness is viewed as one of the disaster management strategies which involves the preparation of an early warning system and consists of timely activities to minimize the effect of a catastrophe (GoK, 1996a:1997).

Enhanced capacity at the Kenya Meteorological Department and the Department of Resource Surveys and Remote Sensing (DRSRS), together with the involvement of private sector institutions in monitoring and forecasting changes in weather patterns and setting up floods early warning systems could, for example, tend to some useful preventive measures. Similarly, the Department of Mines and Geology should be able to carry out

studies and establish an early warning information system which should, for example, show all the areas in Kenya prone to landslides so that they are not used as sites for heavy settlements, roads and railway (UNDP, 1997).

4. Conclusion and Recommendations

4.1 Conclusion
From the study, it has been noted that KRCS has received support from the Kenya Data Network, and networked its three regional offices out of eight regions. There are plans to complete the networking of other regional offices. The aim is to enhance the use ICT in disaster management and general administration.

- The Kenya Red Cross Society has established the EOC in Nairobi, and build capacity in three regions to use ICT for disaster management.

- There is also inadequate training in the use of ICT tools and low capacity of disaster management institutions like the Kenya Red Cross Society to use ICT tools.

4.2 Recommendations

The study recommends further research in Capacity of local institutions in use of ICT in disaster management in order to ensure efficiency in handling various disasters in the country to avoid loss of lives as witnessed in the Nakumatt incident , Molo oil Tank tragedy and other disasters.

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