

Community Based Disaster Risk Reduction: A Case Study from Palestine

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Abstract: *The objective of community based disaster risk reduction (DRR) project is to strengthen civil society and to contribute to a more stable and prospering life for vulnerable communities by strengthened their resilience to natural and man-made hazards and disasters. The purpose of this paper is to investigate the activities of local communities in based disaster risk reduction in the Gaza Strip. A case study of community based disaster risk reduction project is reported in this paper. Ten communities at Biet Lahia and Rafah analysed their vulnerability and capacities, established a plan of action and identified their priorities. The community-based approach resulted in comprehensive involvement and support of the local administration at all stages of project implementation. This paper revealed that it is possible to mitigate the increased disaster risk and vulnerabilities caused by the identified hazards, these mitigation activities can be identified after implementing vulnerability and capacity assessment (VCA). The monitoring and evaluation systems in disaster risk management in Gaza Strip are very limited and not integrated into mitigation activities. It was observed that there is a lack of experience at the local organizations in the documentation of disaster risk reduction activities. It was found also that there is a lack of coordination between government level and local level in disaster risk reduction activities. It is recommended to analyze the existing DRR frameworks to assess effectiveness in promoting the community level DRR activities and in empowering community involvements. It is advisable to strengthen the capacity of local organizations by training courses in community activities, project management and vulnerability and capacity assessment. The local organizations are advised to increase the community participation and share with them all DRR activities and feedback. The government should encourage the DRR activities and establish a link with local communities to promote a better implementation of relevant mitigation activities. It is recommended to establish a strong link with the international organizations that have a large experience disasters management in order to get benefits from their experience.*

Keywords: *Disasters, community participation, risk reduction*

1. Introduction

There has been a continuous evolution in the common understanding and practice of disaster management. Organized efforts to address catastrophic circumstances have been considered as disaster assistance, civil defense, civil protection, disaster management, humanitarian assistance and disaster mitigation [1]. Disasters of all kinds happen when hazards seriously affect communities and households. The absence of appropriate institutional systems to mitigate or respond rapidly to hazards determines a society's or a community's weakness or resilience to the impacts of hazards [2]. Aldbeek [3] recommended that there is an urgent need to plan for disaster risk reduction at Palestine and linkage to the international system. This plan should define roles and responsibilities of national organizations, management plans should be proactive, giving emphasis to preparedness and mitigation.

Civil society should play an important role in strengthening capacities and enhancing community awareness, enhancing civil society organizations in planning, implementing, monitoring and assessing disaster risk reduction programs and actions [4]. Gaza Strip passed through many difficult situations. Palestinian human development report [5] revealed that Gaza Strip has a poor experience in managing disaster in particular, disaster management system was accused of being incapable to cope with disaster. The objective of this paper is to

investigate how local communities have dealt with disaster events and mitigated their impact on their population to report some of the lessons learnt from local community involvement in disaster risk reduction and mitigation focusing on their capacities and needs.

2. Literature Review

Disaster Risk Reduction (DRR) refers to the conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development [1]. Disaster reduction management (DRM) includes prevention, mitigation and preparedness with the response (UNISDR, 2009). DRM is the act or practice of dealing with risk. This includes different processes: planning for risk, identifying risk, analyzing risk, developing risk, and monitoring and controlling risks and the changes [6].

In recent years, the focus changed from responding to disasters to implementing comprehensive DRR approaches. In 2005, 168 governments adopted the Hyogo framework for action 2005-2015, which recommended building the resilience of nations and communities to disaster, and the commission fully supports its implementation and takes stock of progress. The challenge is to translate it into effective action at global, regional, national and local level. Many developing countries are putting considerable effort into implementation, but are constrained by lack of funding and capacity [7]. It was clear from the international work in the pressure on global aid budgets has increased [8]. Islam et al [9] clearly showed the orientation, that it is necessary to take into consideration during a spatially oriented risk assessment all risks that relate to a specific area. This is an indispensable basis for a spatially organized management of risks

A disaster management lifecycle integrated disaster risk management phases of the disaster management cycle, including dealing with the disaster and risk management in the pre-disaster phase, risk management during disaster and post-disaster phase includes rehabilitation and reconstruction [10]. The disaster risk reduction phases are pre-disaster, during disaster and post disaster; the pre disaster includes preparedness and mitigation. McCarthy and Keegan [11] defined mitigation as sustained action that reduces or eliminates long term risk to people and property from natural hazards and their effects. It reduces the impact of disaster risks upon families, homes, communities and economy [12]. Zyl [13] referred to disaster mitigation as structural and non-structural measures that are undertaken to reduce the impact of natural hazards, environmental events and technological hazards on vulnerable areas, communities and households. Structural mitigation means construction projects that reduce economic and social impacts. Non-structural activities mean policies and practices, which raise awareness of hazards or encourage developments to reduce the impact of disasters [14].

Palakudiyil and Todd [15] concluded from a case study conducted in India that understanding and knowledge are the best way to identify the needs of a community and the causes of their vulnerability and the most suitable plan of action. The basic steps in taking the necessary measures to mitigate the risks of disasters lie with the community [16]. Tran [17] concluded in a case study of community building for adaptation to climate change project in Vietnam, that there is a strong relation between disaster mitigation activities and community development. The requirements of reducing risks are an implementation of structural and non-structural prevention and mitigation measures. It means a process of identifying the potential sources of risk, take into practice procedures and other measures to either avoid hazards, when it is possible, or reduce the economic, social and environmental impacts through interventions of existing and future vulnerability conditions [18]. Schilperoort [19] concluded in a case study of Istanbul and Antakya for community based disaster risk reduction that the community efforts focus on structural and non-structural mitigation by increasing the community's capacity to become resilient to disasters through mitigation efforts. There will be a reduction for resources needed for response and recovery.

Baas et al [2] proved that planning, implementation, monitoring and evaluating disaster risk reduction processes are responsibilities of national disaster risk management systems. In addition, the institutions play an

important role in integrating disaster risk management efforts into development programs in order to reduce the vulnerability of rural livelihoods to the hazards. The national disaster risk management institutions developed policy frameworks, disaster management plans and activities in relief and development, and they lead the communication with the general public and sectoral agencies at different levels. Venton and Hansford [20] clarified that participatory assessment of disaster risk is carried out where local communities have identified a need to reduce disaster risk.

Local communities have been encouraged to participate in decision making and implementation bodies. Communities are no longer passive actors waiting for assistance to arrive; they take measures to reduce their risk. They are prepared to respond and they can respond before teams arrive from the outside, community participation has been critical in reducing overall losses [21]. Do [22] recommended that the participation of the voluntary sector and human resource development can be built community capacity, and consider one of the most important components for building up disaster management system. Haghebaert [23] stated that it is necessary for risky communities to be actively involved in the identification and analysis of the risks they are facing and found the solutions interpreted by and participate directly in the planning, design, implementation, monitoring and evaluation of disaster risk activities.

Moss [24] stated as a result from three case studies at Malawi, Sri Lanka, Haiti, India and Kyrgyzstan that NGOs should focus on the longer term goal of municipal and national results rather than simply and singular project objectives or internal organizational goals. Ferdinand et al [25] stated that most organizations were found to be flexible in their activities and some are involved in tasks related to disaster management. Aldabeek [3] reported that: there are several reasons which have led to weak disaster management system in Palestine, these are: (i) lack of coordination between government level and local level in disaster risk reduction activities, (ii) absence of effective mechanism for control of application and enforcement of regulations, (iii) weaknesses of national programs and public policies on preparedness and mitigation, (iv) the disaster risk reduction agenda is enforced by response activities, whereas prevention or mitigation is missing, (v) public responsibilities in disaster risk management are not allocated to one specific relevant authority, but they are shared among different bodies, (vi) national and local capacities for disaster risk reduction are generally very weak at all levels, (vii) the monitoring and evaluation systems in disaster risk management are very limited and not integrated into mitigation activities.

3. Case Study of Community Based Disaster Risk Reduction (CBDRR)

3.1. Project Scope

Based on the international strategy for DRR and on the Hyogo Frame Work for Action 2005-2015, Palestine Red Crescent Society in the recent three years launched project aims to reduce disaster losses and to build resilient communities as an essential condition for sustainable development. The strategic concept is to address the adverse effects of natural and man-made hazards, conflict and poverty through community based disaster risk reduction [7].

3.2. Project Objectives

The purpose of this project was to strengthen civil society and to contribute to a more stable and prospering life for vulnerable communities by strengthened their resilience to natural and man-made hazards and disasters [21]

3.3. Target Groups

The main target groups of this project are residents of five communities (urban clusters) in north Gaza in Beit Lahia and five communities in South Gaza in Rafah. The communities addressed are located within the service areas of the PRCS branches in Gaza. Target communities are conflict and violence prone areas with high unemployment and poverty rates, severe restrictions regarding access to markets, basic social services, and a

high vulnerability to localized recurrent natural hazards. Beit Lahia and Rafah are urban areas and strongly affected by military operation in Gaza [26]. Regarding people's vulnerability, special consideration will be given to the following population groups: women, children, and youth, elderly and chronically sick.

3.4. Main Activities

The project was comprised of two phases. The first was focused on building knowledge and skills of community members regarding DRR and on enhancing and decentralizing the disaster management capacity of local NGOs. The second was for the actual implementation of the project.

Phase 1

This phase is focused to train volunteer coaches in vulnerability and capacity assessment and tools for collecting data about communities, leadership and project cycle management. These coaches will assist training new community volunteers that would later aid in implementing the work of the program. This was conducted with involvement from local leaders. It is assured that the community itself takes ownership of the project operations and implementation. This, in turn proved to be a driving force for the overall sustainability of the Program. Through this decentralized approach with an emphasis on community empowerment, community members and volunteers are given the tools and knowledge to improve their ability to cope with disasters [21].

Phase 2

PRCS [21] explained that the local communities who conducted Vulnerability and Capacity Assessment (VCA), which identified hazards, risks, vulnerabilities, capacity mapping and the actions, will be able to convert the vulnerabilities to capacities by using the available resources or request the international organizations to fund implementing these actions. This VCA provided the basis for local preparedness and contingency plans while at the same time raising awareness of disaster risks within the community. Tools, which have been used to prepare comprehensive VCA reports, include:

- Review of secondary data
- Community baseline data
- Semi-structured interviews
- Focus group discussion
- Direct observation
- Mapping
- Transit walk
- A seasonal calendar
- Historical visualization
- Household assessment
- Livelihoods and coping strategies analysis
- Institutional and social network analysis
- Assessing the capacity of people's organization
- Venn diagram

Using the VCA data, the local communities changed their perceptions of risks and the source of the hazard. Because communities were exposed to a variety of hazards that might be very specific to their geographic location, a multi hazard approach was chosen; the of VCA resulted in:

- Population data (environmental data, peoples' behavior, identity, beliefs)
- Services (infrastructure, health and education)
- Hazards and risks data
- Livelihood
- Institutional structure
- People capacities

They began to implement the action for preparedness and mitigation based on the VCA. This included both structural and non-structural actions.

3.5. Mitigation Activities

Some mitigation activities identified were non-structural and building on existing capacities. Awareness program and training for the community related to the risks such as community based first aid training, awareness in floods, home accident road accident, wastewater management ... etc. Major structural mitigation measures offer an ideal solution and they are within the capacity of the action and are often feasible.

All communities considered the conflict (war) is a chronic frequency disaster, which caused losses in life and destruction. The government built a hospital in Jabalia, which is far from Beit Lahia. The local community stated that building hospitals at the top of high land in view of military towers is dangerous as it has been targeted by soldiers' shots and had to stop working during incursions. The ambulance station is far from Beit Lahia around 6 km and cover 3 areas (Jabalia, Beit Hanoun and Beit Lahia), that means there were a high percentage in life loses. The local communities suggested that they need a hospital to be close to Beit Lahia, to serve all locations and far from the Israeli tanks and soldier towers. The ambulance authorities decided to establish sub-station for all northern Gaza area to expand their services.

Alsaifa community identified that the underground water was unhealthy and not good for drinking. They required filtration devices to make it possible for drinking water. Due to the high cost of filtration devices, only four devices were installed but it was not enough. Therefore, the local communities coordinated with the municipality to link main pipe network from the drinking well, and the householders linked their homes with this main pipe. At the Bedouin village, the local communities stated that the sewage collection lagoons considered a main risk. The children were playing nearby, many of them died when they fall down. The local communities suggested that lagoons should be properly fenced in order to prevent the entrance of children and reduce drowning events.

The Salateen community stated that the local communities suffered from the mine and explosive objects. This area is very close the northern border, the children used this area as a playground, this area is considered buffer zone and Israeli soldiers always shoot in this area. The local communities proposed that playground should be built in a safe area. The municipality with assistance of some NGO have responded and built a playground in a safe are. Alshoka municipality in Rafah is facing problems in the management of waste and garbage; this has increased the disease chances in the area. The municipality distributed garbage containers to reduce this risk and always removed the waste from the collecting place.

4. Conclusion and Recommendation

The objective of community based disaster risk reduction project is to strengthen civil society and to contribute to a more stable and prospering life for vulnerable communities by strengthened their resilience to natural and man- made hazards and disasters. The local communities' institutions received training in vulnerability and capacity assessment, disaster management and disaster reduction. The local communities used their knowledge and conducted vulnerability and capacity assessment reports for their areas. The local communities have been trained in community based first aid training, and they trained the households and 1500 first aid kits have been distributed to them. At least one member from the households in the targeted communities was involved in disaster risk reduction and disaster awareness. Local communities' institutions have written the appropriate mitigation project and participated with local stakeholders. The local institutions were linked with local municipalities during the mitigation project periods.

All communities coordinated their projects with national and local authorities whenever possible, except for strictly operational decisions such as logistic preparations for simulation exercises. This paper revealed that it is possible to mitigate the increased disaster risk and vulnerabilities caused by the identified hazards, these mitigation activities can be identified after implementing vulnerability and capacity assessment (VCA). The

local communities in the Gaza strip have strong local base as they are involved with all community activities and in procedures, which has led to reduce the risks of war. The main disaster at Gaza Strip is the war; the experience in reducing the risks of this disaster is not feasible at the present time. The monitoring and evaluation systems in disaster risk management in Gaza Strip are very limited and not integrated into mitigation activities. The mitigation projects that were implemented in the Gaza Strip are valid for long-term and contributed in reducing the risks of the disasters. There was lack of experience at the local organizations at Gaza Strip in the documentation of disaster risk reduction activities. There were lack of coordination between government level and local level in disaster risk reduction activities.

It is recommended to analyse the existing DRR frameworks to assess effectiveness in promoting the community level of DRR activities and in empowering community involvements. Disseminating information at the community level regarding the existing regulation relevant to DRR and the rights and responsibilities is required. It is advisable to strengthen the capacity of local organizations by training in community work, project management and vulnerability and capacity assessment. Documentation is a very important part in implementing disaster risk reduction activities, Gaza strip organization must take it into consideration. The local organizations must increase the community participation and share with them all DRR activities and feedback. The government should encourage the disaster risk reduction activities and to establish a link with local communities to promote a better implementation of relevant mitigation activities. It is recommended to establish a strong link with the international organizations that have a large experience disasters management.

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