



Socio-Economic Responses from the Disaster Management Committee on Natural Disaster Management in Iringa District Council, Tanzania

Flora Joseph Pallangyo^{1*}

¹*Master of Arts in Community Development and Project Management, University of Iringa (Uoi), Tanzania.*

Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

Article Information

DOI: 10.9734/ARJASS/2021/v15i430266

Editor(s):

(1) Raffaella Giovagnoli, Pontifical Lateran University, Italy.

Reviewers:

(1) Bijan Yavar, Allameh Tabataba'i University, Iran.

(2) Olusola Oladapo Makinde, Ladoke Akintola University of Technology, Nigeria.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/76834>

Original Research Article

Received 30 August 2021
Accepted 08 November 2021
Published 09 November 2021

ABSTRACT

The purpose of the study was to assess the socio-economic responses from Iringa District Council Natural Disaster Management Committee. The research used both quantitative and qualitative research approaches whereby questionnaires were used to collect data from community members and interviews were conducted with the key informants from Iringa District Council Disaster Management Committee. Cross-sectional design was used to gather data to answer the research problem and summarize the results. Targeted population was 11675 community members and key informants from District, Ward and Village Disaster Management Committees (DMC, WDMC AND VDMC) in Iringa District Council whereby a sample size of 133 was drawn out of it. Purposive and simple random sampling techniques were used for the selection of respondents. Descriptive statistical analysis and contents analysis were used in data analysis. The findings of this study revealed that the DMC has been providing both social and economic responses to the disaster victims such as temporary shelters and housing, supply of water and food as well as a relief package to the disaster victims. However, the social responses were considered minimal as compared to the economic responses by the DMC. The study recommended for the WDMCs and VDMCs to be empowered to be able to mobilize social economic assistance within and outside the community. This will help the local community to restore their lives and properties before the

*Corresponding author: Email: drflorapallangyo6@gmail.com;

assistance from the DDMC. The DDMC is advised to establish training schedules with proper skills and techniques on natural disaster management in wards, villages, involving the academic institutions in the respective areas, definitely will facilitate to handle the situation effectively. Furthermore, the WDMCs and the VDMCs should re-enforce the legal disaster management Act, and Village by laws of (2019).

Keywords: Disaster; natural disaster management; disaster management committee; socio-economic response; community; Iringa; Tanzania.

1. INTRODUCTION

The United Nations Office for Disaster and Risk Reduction (UNDRR) defines a disaster as “a serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses that exceed the ability of the affected community or society to cope using its own resources” [1]. According to this definition, only incidents overwhelming the response capacity qualify as disaster. Disasters are classified into two main categories whereby natural disasters are incidents caused by a natural phenomenon, like floods, storms, and man-made disasters are defined as catastrophic events caused by human activity, be it voluntary or non-voluntary. Moreover, a further classification divides disasters on a time scale; sudden and slow onset [2].

Haddow and Bullock [3] in their study on Disaster Management (DM) in New York argued that over the last decade, socio-economical costs of to the US and throughout the world have grown significantly. During the 1990s, the economic toll of natural disasters increased to \$608 billion worldwide, more than the previous four decades combined. Van-Niekerk [4] proclaims that disaster management as an activity of all levels of government relates to an integrated, multi-sectorial, multi-disciplinary approach aimed at reducing the risk associated with hazards and vulnerability.

It is acknowledged that women, the elderly, children and disabled people have been the most vulnerable groups during disasters. This made the Government of the United Republic of Tanzania in collaboration with other stakeholders to establish a number of initiatives to ensure that disaster management issues are given high priority. The Disaster Management Act No. 2 of 2003 was introduced specifically to address all disaster related issues. The Act also established the Disaster Management Department (DMD) as a state body for coordinating all matters

regarding disaster management in the District Council. District ¹ disaster management committees in the United Republic of Tanzania performs activity of all levels of government relates to an integrated, multi-sectorial, multi-disciplinary approach by advising the district commissioner who is the chairperson of this committee, on the disaster management matters and activities performed at the district level.

In 2010, Iringa District Council (IDC) experienced heavy rainfalls and windstorms that are said not been seen for the last forty years. According to the Disaster Management Policy [5], 10,000 households destroyed and people lost their homes and livelihoods. Trends show that in every year during the rainy season people vacate temporarily from their homes to save their lives due to floods, and wind. In addition, drought and hunger affect most of the areas [6]. It claimed that these events would make a turning point in the history of disaster management committee in the District Council [6]. Today the District Disaster Committee established under the Local Government (Urban Authorities) Act and the Local Government (District Authorities) introduced a new perspective with the official recognition of mitigation and risk management. The DMC in Iringa district has a number of major mitigation and preparedness projects undertaken and a significant progress achieved in emergency management and preparedness work since 2015 [7].

However, despite the DMC being the overseer of Disaster Management activities in Iringa district, still its social- economic contribution to the community is not yet well established or known. People are still suffering from natural disasters and the impact of these disasters is being experienced virtually at household, community, and institutions. Life has become very difficult

¹ Tanzania is divided into thirty-one regions (Mkoa in Swahili). Each region is subdivided into districts (Wilaya in Swahili). The districts are sub-divided into divisions (Tarafa in Swahili) and further into local wards (Kata in Swahili)

and painful, leading to a destabilized the family structure, erosion of the asset base of households, depletion of labour force and restrict the ability to earn cash from productive activities. Therefore, it is based on these arguments that this study assessed socio-economic responses from the Disaster management Committee on Natural Disaster Management in Iringa District Council.

2. LITERATURE REVIEWED

2.1 Systems Theory

Systems theory introduced by biologist Bertalanffy in the 1930's as a modelling devise that accommodates the interrelationships and overlap between separate disciplines. Systems theory is an approach to industrial relations, which links the enterprise to an organism with interdependent parts, each with its own specific function and interrelated responsibilities. The process requires different components be involved, each of these components has a role to do in accomplishing the mission. For the policy to be effective, all the required parties should fully participate in the preparation process, they work as system and if it happens some parties were not involved, then the proposed policy will not work correctly.

This theory was applicable to this study as it emphasizes on relations. These relations are associated to the disaster management committee and community members as interdependent parts, each with its own specific function but with interrelated responsibilities on disaster management. From the above-mentioned theory, the study adopted interdependent parts as study independent variables as shown in conceptual framework such as community knowledge through public awareness, educational programmes, and training; disasters management activities and committee responses on socio-economic aspects. However, the study sought to establish a link between natural disaster management and full community's participation. Therefore, information was collected from stakeholders to find out the contribution of DMC to the communities that have suffered from natural disasters.

2.2 Empirical Review

Jason and Meneghini [8] did a study on climate change response and natural disasters: scientific

evidence of a possible relation between recent natural disasters and climate change. The study was a comparative one and primary data collected from 60 committee members. Descriptive analysis used to analyse qualitative and quantitative data. They found that effects of climate change have very great contribution to the occurrence of the natural disasters. Around the globe, the response of climate change has become an issue of discussion for whatever the development plans a particular organization is coordinating especially on supplying temporary housing, water and food to vulnerable.

Jason, [9] conducted a study on "Disaster Response in New York. "The study employed a cross-sectional design and primary data collected from 50 committee members. Qualitative content analysis used to analyse qualitative data. The study found that many people still think of disasters as accidents or events, which cannot be anticipated. This results in a focus on responding to the immediate needs created by a disaster rather than preventing or reducing effects. Disaster management conveys the important idea that protecting populations and property also involve the estimation of risks, preparation, activities that will mitigate the consequences of predictable hazards and post-disaster reconstruction in a way that will decrease vulnerabilities. An important goal is building a culture of awareness, that disaster preparation is possible, also will greatly reduce the consequences from disasters in terms of human and economic loss.

2.3 Contribution to Knowledge

Studies mentioned above did not prioritize the assessment of the socio-economic responses on Natural Disaster Management from the Disaster Management Committee. Most of the studies have focused much in assessing the factors contributing to natural disasters and organizational structure on disaster management. These studies did not seek to examine the stakeholders' response to disaster management or their participation in disaster management activities. Furthermore, in terms of scope, most of the studies were not based in Tanzania and especially in Iringa Region. This has created a research gap in natural disaster management studies in Iringa Region and therefore, this study sought to assess socio-economic responses from the Disaster management Committee on Natural Disaster

Management in IDC purposely to fill the exiting knowledge gap.

3. METHODOLOGY

The study was conducted in Iringa District Council. The district shares borders with Mpwapwa District (Dodoma Region) in the North, Kilolo District in the East, Mufindi District in the South, Chunya District (Mbeya Region) to the west. The district has a total population of 245,033 (Male 106,749 and female 138,284) according to demographic census from United Republic of Tanzania (URT) 2012. Iringa district is divided into 6 divisions, which are Idodi, Ismani, Kalenga, Kiponzero, Mlolo and Pawaga and 28 wards² with a total of 133 villages and 718 hamlets. Most of the area is occupied by the Ruaha National Park (10,411.3sq.km) leaving only 2,427.6 sq. km. for human activities (URT, 2012).

According to the IDC Profile [6] Pawaga and Isimani divisions have been the one facing natural disasters in the past ten years continuously. While Pawaga has been facing floods, Isimani division has been facing drought and hunger. The researcher therefore selected one of the most affected wards from these divisions to get a total of six villages where the study was conducted. The study employed a cross sectional research design with both random and purposive sampling methods being used to gather required data for the study. The targeted population for this study was the community members within the study area. Key informants from the district, ward and village management committees in Iringa District Council were also involved based on the positions they hold. Data was therefore collected from 116 community members' and 17 key informants to make a total of 133 respondents of this study.

Data in this study was collected through questionnaires, interviews and documentary review. Questionnaires were administered to the community members and there were filled and collected at the end. The illiterate ones were assisted by the researcher by reading out the questionnaires to them and document their answers respectively. Interviews were conducted

² A Ward (Kata) is an administrative structure for one single town or portion of a bigger town (Urban Wards). Rural wards are composed of several villages

with the key informants of Disaster Management Committees from Iringa District Council; Wards and Villages. A documentary review was used as a major source of secondary data and this was obtained from different sources of at the IDC disaster management profile. A descriptive analysis was used to analyse quantitative data and content analysis was used to analyse qualitative data.

4. RESULTS AND DISCUSSION OF THE FINDINGS

4.1 The Demographic Information of Respondents

The demographic data of respondents were sought for this study. The aim was to use the demographic characteristics to compare the responses to other core data of the study. The demographic data of the respondents is tabulated basing on age, gender and the level of education in Table 1 below where as results on respondents' age show that (42) 33.1% were aged between 18-30, (72) 54.1% were aged between 31-49, with only (17) 12.8% who were above 50 years. On respondents' gender the data revealed that (73) 54.9% of the respondents were male while (60) 45.1% of the respondents were female. This implies that both genders were involved in the study and hence the study considered gender representation. On the other hand, data on respondents' level of education shows that, majority of respondents (91) 68.4% had primary level of education, (20) 15% had secondary level of education, (10) 7.5% were diploma holders while those with degree level of education were (6) 4.5%, and those who did not go to school were (6) 4.5%. This implies that majority of the respondents were literate and hence being able to read and fill the questionnaires effectively to obtain the information intended.

4.2 Socio-Economic Responses from DMC on Natural Disaster Management in Iringa District Council

The study sought to assess socio-economic responses from DMC on natural disaster management in Iringa District Council. To establish this, the researcher posed a series of questions to the community members and they had to respond yes or no. Results from the respondents shows that out of 116 community members, 60 (51.7%) said no, to the question,

Table 1. Demographic information of respondents

Demographic characteristic	Frequency (n=133)	Percent
Age	42	33.1
18-30		
31-49	72	54.1
50+	17	12.8
Total	133	100.0
Gender		
Male	73	54.9
Female	60	45.1
Total	133	100.0
Education Level		
Primary	91	68.4
Secondary	20	15.0
Diploma	10	7.5
Degree	6	4.5
None	6	4.5
Total	133	100.0

Source: Field data, 2021

Table 2. Community members' responses on socio-economic responses by the DMC (based on multiple responses)

Statement (n=116)	YES		NO	
	F	%	F	%
1. DMC provided temporary housing/shelter are satisfactory to vulnerable victims of natural disasters.	56	48.3	60	51.7
2. DMC provided emergence medical services are satisfactory to vulnerable victims of natural disasters.	48	41.4	68	58.6
3. DMC provided water and food are satisfactory to vulnerable victims of natural disasters.	52	44.8	64	55.2
4. DMC facilitates and provided satisfactory rescue, evacuation, restoration, rehabilitation to vulnerable victims of natural disasters.	42	36.2	74	63.8
5. DMC provided satisfactory educational facilities and infrastructure support to vulnerable victims of natural disasters.	30	25.9	86	74.1

Source: Field data (2021)

"Is the disaster management committee providing temporary housing/shelter to vulnerable people during the occurrence of natural disasters?" while 56 (48.3%) agreed. 68 (58.6%) said no: to the question, "Is the disaster management committee provides emergence medical services during the occurrence of natural disasters?" while 48 (41.4%) agreed. 64 (55.2%) said no, to the question "Is the disaster management committee providing water and food to vulnerable people during the occurrence of natural disasters? While 52 (44.8%) agreed. 74 (63.8%) said no, to the question "Is the disaster management committee facilitating to provide rescue, evacuation, restoration, rehabilitation to vulnerable people during the occurrence of natural disasters?" while 42 (36.2%) agreed. 86 (74.1%) said no, to the question that "Is the disaster management

committee provided with educational facilities and infrastructure support to victims of natural disasters?" while 30 (25.9%) agreed. The responses to these statements are indicated in the Table 2 based on multiple responses.

The researcher further conducted a series of interviews with DMC representative to obtain information on the social economic response by the DMC to manage natural disasters in Iringa District Council. During the interviews with the DMC representatives, the respondents mentioned that the DMC repairs buildings for victims and provide financial contributions to the victims. The DMC also provides various compensations to victims by providing temporary accommodations, foods, clothes and offering community synergies and other natural disaster advices. The DMC is also actively involved on

raising awareness on disease control, provide food security, and safety for environment. For example, one of the DDMC said: *"The DMC normally provide the community with relief kit, which includes food, shelter and cloths during the occurrence of natural disaster."* (Interview with DDMC, 22/07/2021).

The respondents further highlighted that, the DMC oversees and coordinates the activities to community members and other stakeholders during disaster management to minimize the impacts of natural disaster to the community. This is done in collaboration with the community leaders and has enabled to minimize the risks. For example, one of the respondents said: *"The DMC oversees and coordinates the activities through administering the 2015 Disaster Management Act and its regulations including guidelines for stakeholders' engagement, villages and wards leaders. This coordination goes hand in hand with education on the application of the 2019 village by-laws and Disaster Management Act [7], forming a disaster committee in each village"* (Interview with DDMC member, 22/07/2021).

Findings from the interviews with the DDMC also revealed that the DMC collaborates with other stakeholders to overcome the effects and restore the life of the victims. During the interview one of the respondents said: *"We work with different organizations and private individuals like the Red-Cross, USAID-Boresha Afya and ASAS group of companies to restore the lives of the disaster victims."* (Interview with DDMC member, 22/07/2021)

The researcher also conducted interviews with WDMC and VDMC representatives to obtain information on the social economical responses from DMC on natural disaster management in Iringa District Council. Findings from these interviews revealed that the DMC social economic response includes the provision of relief packages such as food, water and clothing during disasters. For example, one of the WDCM members said: *"The DMC works hand in hand with the community leaders to distribute food and clothing to the victims"* (Interview with WDMC, 15/07/2021). The other member of the VDMC said: *"In case of disaster occurrence, the DMC comforts the victims of natural disasters by providing them with shelters and food"* (Interview with VDCM member, 15/07/2021).

Furthermore, during the interview with one of the WDMC member the following statement was

made: *"To offer financial contributions, food, shelter and repair buildings to victims, upgrading damaged infrastructure is what the DMC has been doing in the villages faced by natural disaster"* (Interview with WDMC, 15/07/2021). Another member of the VDMC had this to say: *"The DMC provides cooperation to the victims by giving them food and shelters. We also relocate people living in the valleys before the occurrence of floods"* (Interview with WDMC, 15/07/2021).

Responses from the social economic response by the DMC show that, the community members are not satisfied with the social response by the DMC during natural disasters. Community members have agreed that they have received temporary shelters and emergency food from the DMC but they have received minimal response when it comes to evacuation services, educational facilities and infrastructures such as roads and bridges. The community members argue that the DMC has been slow in rehabilitating the infrastructures damaged by the natural disasters and hence they fail to obtain some of their basic needs as a community. Results have further indicated the presence of other stakeholders who through their cooperation with the DMC have taken part in providing relief services to the disaster victims. These stakeholders range from the private individual, local companies to international Non-Governmental Organizations. Stakeholders have played a role for contribution of DMC in social-economic response in the respective wards and villages.

The results are in line with Jason, [9] who argued that many people still think of disasters as accidents or events, which cannot be anticipated. This results in a focus on responding to the immediate needs created by a disaster rather than preventing or reducing effects. Disaster management conveys the important idea that protecting populations and property also involve the estimation of risks, preparation, activities that will mitigate the consequences of predictable hazards and post-disaster reconstruction in a way that will decrease vulnerabilities. Alongside with above findings, DMC utilizes other stakeholders in place to mobilize resources and distribute the social economical needs, hence enable to restore lives and property and eventually acknowledged by the disaster victims. Therefore, collaboration with local leaders and stakeholders has contributed to DMC in socio-economic responses on natural disaster management in Iringa District Council.

5. CONCLUSION RECOMMENDATION

5.1 Conclusion

The objective of this study was to assess the socio-economic responses from DMC on natural disaster management in Iringa District Council. The findings from this study revealed that the DMC provides various relief packages to disaster victims by providing temporary accommodations, foods, clothes and offering community synergies and other natural disaster advices. The DMC is also actively involved on raising awareness on disease control, provide food security, and safety for environment. Although these social- response are claimed by the community members to be minimal and slow. For example, some of the community members showed how slow the DMC has been on repairing damaged infrastructures such as bridges and roads, which gives them difficulties in obtaining their basic needs. Hence the finding on the social economic response from the DMC indicates that the DMC has existed provided more economic response to the disaster victims as compared to the social response. Therefore, basing on the findings of this study, it is concluded that, the DMC has been providing both social and economic responses to the disaster victims however, the social responses are minimal as compared to the economic responses by the DMC.

5.2 Recommendations

Basing on the findings from this study, it is recommended that, the District Disaster Management Committee has to make thorough supervision in ensuring that there are training schedules on natural disaster management even before the occurrence of the early warnings. These training schedules should also involve the academic institutions such as schools, college and Universities in the respective areas. People in the community are the first responders, therefore are the ones who are supposed to take care of the situation until further assistance is given from the responsible agencies. If people are well equipped with proper skills and techniques, definitely they will handle the situation accordingly. The community is also advised and encouraged to be ready to participate with the DMC in managing natural disasters.

Early warnings information before disasters is very important as it prepares people

AND

psychologically before the disaster happens. People will start to take appropriate actions before the event to avoid the consequences that might arise during the incident. Currently, the ways that are used by the Tanzania Metrological Authority (TMA) to communicate early warning messages are not accessible to as many people as possible. TMA has to communicate their messages through local media and/or the local leaders in the community, as they are believed much by their followers. Findings have shown that there are people in the community who relies much on indigenous knowledge. The WDMCs and the VDMCs should re-enforce the legal frameworks on disaster management Act, and Village by-laws of (2019). This may include for example, prohibiting people from building houses in areas prone to natural disasters.

The WDMCs and VDMCs should be empowered to be able to mobilize social economic assistance within and outside the community. This will help the local community to restore their lives and properties before the assistance from the DDMC.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
<https://www.sdiarticle4.com/review-history/76834>