

**EFFECTIVENESS OF CIVIL-MILITARY COORDINATION IN RESOURCES MOBILIZATION DURING DISASTER RESPONSE OPERATIONS IN KENYA: A CASE STUDY OF SOLAI DAM TRAGEDY IN NAKURU COUNTY, KENYA**

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**Accepted: June 6, 2023**

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**ABSTRACT**

*This study assessed how well civil-military cooperation worked to mobilize resources during the Solai Dam catastrophe disaster response operation in Nakuru County, Kenya. The study was informed by general systems theory. The study's target group included 395 respondents from the multi-agency response team and other stakeholders who were involved in the Solai dam accident. A descriptive research design was used. The study's 199 respondents were chosen by stratified random selection, and its major data were gathered through questionnaires, interviews, and focus groups. The researcher sought permission from the relevant authority before proceeding with data collection. A pilot study was undertaken by the researcher to evaluate the questionnaire's validity and reliability. Statistical Package for Social Sciences (SPSS Version 23) was used in the cleaning and recording of data. The qualitative data were analyzed through content analysis while quantitative data was analyzed using descriptive, regression, and correlation analysis. Data presentation was done by the use of percentages, frequency tables, means, and narratives. The research demonstrated a positive and statistically significant impact of Civil-Military coordination in resource mobilization on the effectiveness of disaster response operations in Kenya. Based on the results of the study, it concluded that civil-military coordination in resource mobilization has a statistically and positive significant impact on disaster response operations effectiveness in Kenya. The study recommended that Civil-Military organizations must improve their command and control, understanding, knowledge, and relations to improve coordination in resource mobilization. The study further recommended strict adherence and implementation of the existing policies, legal and institutional frameworks on disaster management.*

**Key Words:** *Disaster Management, Civil-Military Cooperation, Solai Dam, Resource Mobilization*

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**CITATION:** Kiumbani, C. M., & Barasa, L. (2023). Effectiveness of civil-military coordination in resources mobilization during disaster response operations in Kenya: A case study of Solai Dam tragedy in Nakuru County, Kenya. *Reviewed Journal of Social Science & Humanities*, 4 (1), 288 – 297.

## INTRODUCTION

Coordination between military and civil services is difficult, and it is made worse when both groups work together during catastrophe efforts. According to Tanzi, Apvrille, Dugelay, and Roudier (2014), the organizational structure and functionality of civilian and military groups are different from one another. However, cooperation is necessary to achieve better results, so they accept one another's differences and move forward through collaborative planning, open communication, equitable assigning of duties and responsibilities to ensure a sufficient response to a crisis. Disasters know no borders; they have occurred all over the world, and soldiers have participated in humanitarian relief efforts all over the world (Burke, 2016).

During the Pakistan-Kashmir earthquake in 2005 that killed 38 people and injured hundreds, the response was hampered by the unwillingness of civil organizations to share information with the military (Dörre & Goibnazarov, 2018). Murtaza, Ahmed & Rehman, (2013) also found that there was a lack of coordination between military and civil organizations during the response to the 2005 Pakistan-Kashmir earthquake. The study found that military organizations had the capacity to respond quickly and effectively, however, the civil organizations were hindered by an inadequate planning process, inadequate resources, and civil-military tension.

Africa has also had its fair share of disasters where Civil-Military coordination has taken place. During Ebola epidemic in West Africa, Sierra Leone formed a series of Civil-Military interagency coordination which enabled the alignment of goals, coordinated planning, timeliness of decision-making, and coordination of resources which led to the halting of an epidemic (Nevin & Anderson, 2016).

Kenya has faced many disasters where military civil organizations are involved in disaster response operations. Kenya's major incidents where military and civil organizations have been involved include but are not limited to collapsed building on Ronald Ngala Street on 23<sup>rd</sup> January 2006; Sinai slum fire incidents on 12<sup>th</sup> September 2011; the Westgate attack on 21<sup>st</sup> September 2013; Garissa university attack on 2<sup>nd</sup> April 2015; DusitD2 Hotel attack on January 15<sup>th</sup>, 2019 among many other major disasters in Kenya.

Several disasters have occurred in Nakuru County, on 31<sup>st</sup> January 2009, there was an oil tanker spill disaster killing 113 people and injuring over 200 at Sachangwan, on 24 December 2016, 43 lives were lost in the Naivasha highway fire at Karai, on 22 October 2017, a helicopter crashed in Lake Nakuru claiming lives of 5 occupants. On 9<sup>th</sup> May 2018, Solai dam located in Nakuru County, broke its banks, leaving in its wake; the gruesome deaths of about 50 people; horrifying injuries emotional, mental, and as well as physical; great destruction of property and displacement of people (Mburu, 2018; KHRC, 2014). Both military and civil organizations were involved in disaster response operations in the Solai Dam Tragedy in Nakuru County, Kenya, which served as the study's focal point.

### **Statement of the Problem**

Ineffective Civil-Military coordination is one of the many issues that those engaged in disaster operations must deal with. Military and civilian organizational culture, operating procedures, and structure differ which affects their effective coordination and relationships. Also, cooperation during disaster response operation face problems of differing objectives and modes of Civil-Military operation, incompatible communications, overly restrictive security classifications, competing missions, inadequate procedures and structure, and bureaucratic problems.

Civil organizations carry out their responsibilities following guiding principles of, neutrality, impartiality, and humanity, which makes it more difficult to coordinate with the military because doing so would violate these principles. These problems faced by the coordination of the Civil-Military during disaster response operations result in the ineffectual management of disasters appropriately and quickly. In Kenya, military and civil organizations are not immune to these coordination problems and challenges during disaster response operations which have led to slow responses, high fatality, and mortality rates.

Despite the regular occurrences of disasters in Kenya where military and civil organizations are involved; there are little or no empirical studies on the effectiveness of The coordination of Civil-Military in resource mobilization during disaster response operations in Kenya and thus knowledge gap exists. By determining civil-military coordination in resource mobilization during disaster response activities following the Solai Dam Tragedy in Nakuru County, Kenya, this study intended to bridge this information gap.

### **Research Objective**

This study assessed how well civil-military cooperation worked to mobilize resources during the Solai Dam catastrophe disaster response operation in Nakuru County, Kenya.

The following research inquiry was formulated by the researcher: -

- How well did civil-military cooperation work to mobilize resources during the Solai Dam disaster response operation in Kenya's Nakuru County?

## **LITERATURE REVIEW**

### **Review of Related Literature**

#### **Civil-Military Co-ordination in Resources Management and Mobilization during Disaster Response Operation**

When disaster strikes, there is great demand for supply for disaster response resources which range from materials, equipment as well as personnel, thus the need for coordination in resource mobilization and management (Celia, 2016). In civil-military disaster operations, a lot of response activities depend on shared resources such as personnel, equipment, protective gear, materials, transport means, and systems. Therefore, coordination of civil-military is essential to the success of any disaster response mission because it expedites the response and recovery process by making use of the most effective and best resources. This careful coordination avoids duplication of effort, protects lives, and conserves resources (Ibrahim, Abdullah & Roslan, 2018).

Military organizations have better resources and capabilities than most civil organizations to carry out specialized engineering, medical support, evacuation, strategic air, and sealift among others during a disaster response (Tatham & Rietjens, 2016). Thus when disaster strikes there is a need to capitalize and utilize these military resources and capabilities; unfortunately there are conflicts of interest and serious concerns about use of military in disaster response.

Some civil organizations feel that their fundamental principles such as being neutral, are compromised when they work together with military organizations during disaster response (Kaneberg, Hertz, & Jensen, 2016). The need for resources management and mobilization during disaster response operations is meant to improve the availability of resources, improve the exchange of resources, accelerate the exchange of knowledge, increase coherence in the use of resources, avoid duplication of efforts, and also to minimize inefficient use of disaster response resources. However, Kaneberg, Hertz, and Jensen (2016) study was based in a developed country Sweden, with different social-economic factors from developing countries like Kenya which might have affected resources management and mobilization during emergency response. In order to fill that gap this study established the Civil-Military coordination effectiveness in resource mobilization during the disaster response operation of the Solai *Dam* tragedy in Nakuru County, Kenya.

A number of studies such as Development Initiatives (2017) and World Bank (2020) have established that most African countries lack the adequate capacity for disaster management, mainly due to inadequate resources. Kudzanayi, (2020) African countries lack adequate preparedness to deal with disasters despite their frequent occurrence and this can be attributed to lack of resources for disaster management. Thus, most African countries need to manage and mobilize resources to achieve a successful response to the disaster. This informs the need

to analyze how civil-military coordination in resources management and mobilization during disaster response operations in Kenya.

### Theoretical Framework

It is essential to anchor academic research with a specific theory or model (Osanloo & Grant, 2022). The general systems theory guided the study.

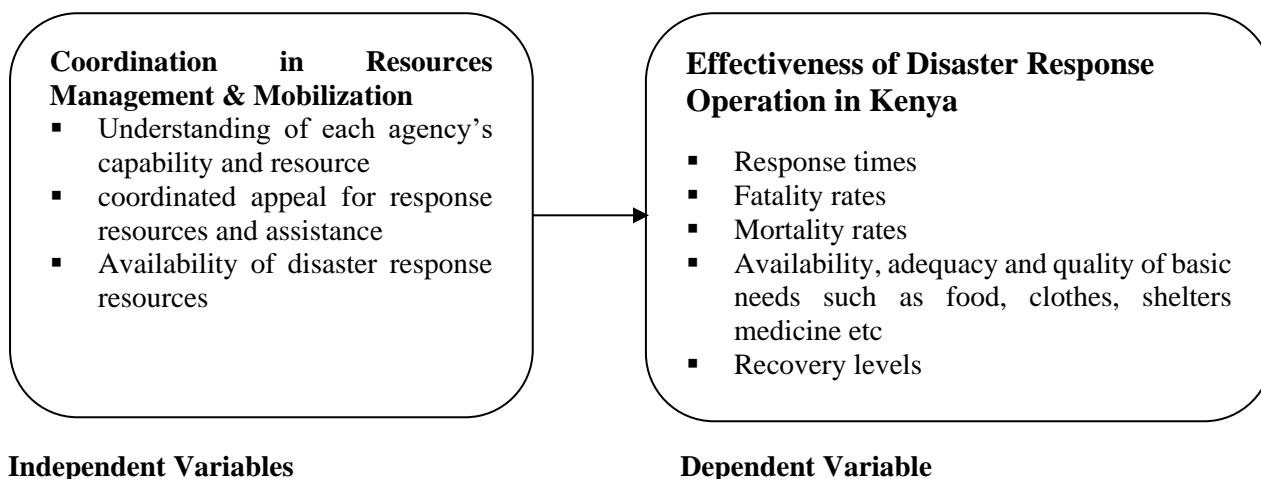
### General Systems Theory

This study adopted the Theory of General Systems proposed in 1940 by Ludwig von Bertalanffy (Bertalanffy, 1968). There should be direct connections between various elements which form a system such as people, processes input, output, and products so that they fit together as a whole. The proponent of this theory Bertalanffy stated that any well-structured organization has an environment in which it is established and functioning. There should be direct connections between various elements which form a system such as people, processes input, output, and products so that they fit together as a whole according to Bertalanffy (1968).

Disaster response units can be like a system in that it is made up of elements such as the military, police, civil organizations, general public, and other stakeholders, etc. For these elements to function properly, they have attributes that must interact and work in harmony as if they were a whole system in disaster response operations to minimize loss of life and properties as well as to reduce the sufferings of victims; such as Solai dam tragedy victims, with minimum delay. But unfortunately, there are problems in systematically coordinating most military and civil actors which obstruct the efficiency and effectiveness of disaster response.

In this study, the disaster response team comprised of civil and military personnel team among others has to provide inputs (resources mobilization and communication) which formed independent variables that go through the necessary processes so that the desired outcome (successful disaster response operation) is realized which was the dependent variables. This theory became paramount in this study because it identified disaster response team as a system where Civil-Military coordination influences successful disaster response operations.

### Conceptual Framework



**Figure 1: The Study Conceptual Framework**

### METHODOLOGY

A descriptive research design was most appropriate as this study aimed at describing situations, behaviors, phenomena, and subjects under study (Mugenda and Mugenda 2008). To obtain opposing and complimentary ideas or viewpoints, the researcher used a mixed method concurrent triangulation strategy to collect quantitative and qualitative data. By doing so, the researcher got a complete understanding and a clear picture of the Civil-Military coordination effectiveness during a disaster response operation of the Solai Dam Tragedy in Nakuru

County Kenya. The research focused on Nakuru County but looked into the Solai dam tragedy at Solai. Solai dam tragedy was an appropriate study site as most of the main type of disasters that affects Kenya and where both civil and military are involved in response is rapid onset kind of disasters, thus the study had wide application and generalization. Military team and civil organizations which formed the multi-agency response team that was involved during the Solai dam tragedy was the target population for this study. According to National Disaster Management Unit director (2021), the official multi-agency response team comprised approximately 350 personnel drawn across all leadership ranks from Kenya Red Cross, Kenya Defence Forces, Kenya Police Service, National Disaster Management Unit, National Youth Service, and County Government of Nakuru. The study population also comprised key informants drawn from Ministry of Interior Government Officers -the area Assistant chief, Chief, Assistant County Commissioner, elected leaders who comprised of the area MCA, MP, Senator, Women Representative, Governor, as well as the head of families of the 37 households that were affected by Solai dam tragedy Kenya Human Rights Commission (2018). Thus in total, the study's target population was 395 respondents.

The multi-agency response team that was involved during the Solai dam tragedy was used in this study to identify respondents using a stratified random sampling approach. A formula created by Yamane (1967) was used in determining the sample size. Hence a sample size of 199 respondents was drawn from different stakeholders that were involved during the Solai dam tragedy. The sample size was distributed proportionally and judiciously to all the stakeholders.

This study relied heavily on primary data from the research collected through questionnaires. The questionnaires were administered to the multi-agency team respondents that were involved in the Solai dam tragedy. Using questionnaires in data collection helped access a large group of people economically. The researcher informed and explained the study's significance to the multi-agency response team's study participants so that they would faithfully and truthfully complete the questionnaire.

A structured interview guide also helped the researcher to probe deeper into Ministry of Interior Government Officers -the area Assistant chief, Chief, Assistant County Commissioner, elected leaders who comprised the area MCA, MP, Senator, Women Representative, and Governor to get deeper information on the Civil-Military coordination effectiveness during disaster response operations Solai Dam Tragedy in Nakuru County Kenya.

The researcher also carried out Focus Group Discussion (FGD) with the head of families of the households that were affected by the Solai dam tragedy. FGD helped the researcher gain insights by eliciting the perspectives and opinions of the affected families on the Civil-Military coordination effectiveness during disaster response operations Solai Dam Tragedy in Nakuru County Kenya. The researcher formed groups comprising 9 heads of families, thus the researcher held 2 FGDs.

The study carried out pilot tests to fine-tune the questionnaire to minimize shortcomings and weaknesses in the questionnaire design (Kothari, 2008). The sample size for the pilot research varied from 1% to 5% of the sample size for the entire study (Drost, 2011). Thus this study used 5% of the overall study sample size to sample 10 multi-agency response team members that were involved during the Solai dam tragedy for pilot testing to check for any flaws, limitations, and errors in the study research instruments. Those multi-agency response team members who were used during the piloting study were not used during the main study.

On data analysis, initially, the researcher probed and inspected the data for clarity, and then the researcher cleaned the data and captured it on SPSS software (version 23) for analysis. Thereafter, the researcher used descriptive statistics such as mean, percentage, standard deviation, and frequency distribution among others to analyze the data. Furthermore, qualitative data were analyzed using content analysis.

## FINDINGS

### The Civil-Military Coordination During Disaster Response Operations in Kenya

This study presented the findings of the descriptive statistics concerning various statements and opinions on the effectiveness of Civil-Military coordination during disaster response operations Solai Dam Tragedy in Nakuru County Kenya. Subsequently, the mean was calculated from responses in a questionnaire that had a five-Likert scale rating of 1-5, (1= strongly disagree; 2 = disagree; 3 = undecided; 4 = agree, and 5 = strongly agrees ) the researcher calculated the average of the responses. To calculate the mean of the responses, the researcher added up all the responses and then divided them by the number of responses. While the standard deviation measured the spread of the data around the mean.

### Civil-Military Coordination in Resources Mobilization

**Table 1: Civil-Military Coordination in Resources Mobilization**

<b>Statements on Civil-Military Coordination in Resources Mobilization</b>	<b>Mean</b>	<b>Std. Deviation</b>
When responding to disasters military and civil organizations understand each capability and resource.	2.7854	0.8650
Military and civil organizations are well coordinated in appealing for response resources and assistance.	4.0146	1.2527
As a result of good coordination, there was no shortage of disaster response resources.	2.4146	1.1319
There is well coordination of military and civil organizations in damage assessment and needs analysis.	3.5463	0.7356
There is well coordination of military and civil organizations which leads to the prioritization of resource allocations to major problems which can have a major impact on disaster victims.	3.6817	0.6603

Source: Researcher, 2022

The study findings showed that the multi-agency response team members agreed with the statement that Civil and Military organizations are well coordinated in appealing for response resources and assistance; there is well coordination of military and civil organizations which leads to prioritization of resources allocations to major problems which can have a major impact on disaster victims and there is well coordination of military and civil organizations in damage assessment and needs analysis. Each of the statements had mean scores of 4.0146, 3.6817, and 3.5463 respectively.

The multi-agency response team members were undecided on whether when responding to disaster military and civil organizations understand each capability and resource, which had mean scores of 2.7854. The study findings further showed that the multi-agency response team members disagreed with the statement that there as a result of good coordination, there was no shortage of disaster response resources which had a mean score of 2.4146. The study results infer a poor level of Civil-Military Coordination in resource mobilization during the Solai Dam Tragedy in Nakuru County Kenya. The area MCA had this to say about Civil-Military coordination in resources mobilization:

*There was poor coordination in resource mobilization. The little resources that were mobilized were not utilized specifically to benefit the victims of the Solai Dam. There were looting funds, supplies, and other resources meant for Solai Dam victims. Neighboring communities who were never victims were wrongfully added to the victim list. There was poor coordination as there was duplication of work which further depleted the resources that were mobilized without meeting all the objectives. (KII 1, 2022).*

These views were supported by household heads who participated in FGD as they claimed funds that were meant to help them were stolen and received negligible compensation compared to the many relatives who died

and the property they lost. While the area Member of Parliament (MP) Mr. Gachobe had contradicting views as raised by the FGD participant:

*The Civil-Military coordination in resource mobilization was good. I helped in the coordination of resources mobilization and helping all the victims. We have been able to do the compensation, and reconstruction of victims' houses and other infrastructure affected such as dispensaries, electricity, and roads that were affected by Solai Dam tragedy (FGD Participant 1, 2022).*

The study results support the findings of The Kenya Human Rights Commission (KHRC, 2014) conducted an inquiry into the Solai Dam tragedy in Kenya and found that the victims of the tragedy and the affected communities had not been provided with adequate compensation for their losses. The study results also concur with other scholars such as Abdullah and Roslan (2018), who established that proper civil-military coordination in resource mobilization is vital for successful disaster response operations. Appropriate civil-military coordination in resource mobilization led to the availability of needed resources which fastens the response and recovery process when disaster strikes.

## **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

The summary of the findings analysis of the Civil-Military coordination effectiveness in resource mobilization during disaster operations response is presented in this section, Solai Dam Tragedy in Nakuru County Kenya.

The study found that civil-military collaboration in resource mobilization had a positive and statistically significant impact on the efficiency of disaster response operations in Kenya. Proper coordination of Civil-Military in resource mobilization leads to the availability of needed resources such as funds, materials, food, equipment, health products, and personnel among many other resources which speeds up the response and recovery process when disaster strikes.

Based on the study results, the study found that civil-military collaboration in resource mobilization has a favorable and statistically significant impact on the efficiency of disaster response operations in Kenya. Proper Civil-Military coordination in resource mobilization leads to the availability of needed resources which speeds up the recovery and response process when disaster strikes.

On Civil-Military coordination in resource mobilization, this study recommended that there is need for improvement in coordination of Civil-Military in resource mobilization during disaster response operations in Kenya. This can be done by improving the understanding of each other capabilities and resources. There is also a need of avoiding duplication of efforts to economically utilize the available resources. Further, the study recommended a need for transparency and accountability in resources mobilized to minimize misappropriation and embezzlement.

### **Suggestions for Further Studies**

The study recommended replication of similar or related research on the coordination of Civil-Military during disaster response operations in other disasters which have happened in Kenya such as terror attacks, and collapsed buildings among others to compare, contrast, and enrich the study results. Future research could also consider analyzing the extent of Civil-Military coordination in other cycle phases of disaster management, especially in planning and preparedness.

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