REPORT ON THE PROCEEDINGS OF 2018 IPSTC RESEARCH SYMPOSIUM

Maritime Disaster Response and Management

04 October, 2018 | At IPSTC | Karen, Westwood Park Road|Nairobi, Kenya

"Enhancing Capacity for Maritime and Infrastructure Disaster Response and Management"

REPORT ON THE PROCEEDINGS OF 2018 IPSTC RESEARCH SYMPOSIUM

Maritime Disaster Response and Management

04 October, 2018 | IPSTC | Karen, Westwood Park Road | Nairobi, Kenya

IPSTC Peace and Security Research Department

©2018 International Peace Support Training Centre
Nairobi, Kenya.

"Enhancing Capacity for Maritime and Infrastructure Disaster Response and Management"

Compiled by

IPSTC Peace and Security Research Department

Copyright © 2019 International Peace Support Training Centre.

All rights reserved.

No part of this publication may be reproduced, distributed or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher, except brief quotations embodied in critical reviews and certain other non-commercial uses permitted by copyright law.

Published by

International Peace Support Training Centre

P.O. BOX 24232 – OO502

Westwood Park Road Karen, Nairobi, Kenya

Tel: +254 791574336 / 786585167

Website: www.ipstc.org

Design and Print by

MagFre Enterprises Limited

Contents

1.Executive Summary.....iii
2.The Symposium Concept.....iii
2.1 Objectives of the Research Symposium.....iv
2.2 Expected Outcome iv
2.3 Participants iv
2.4 Venue and Date.....iv
2.5 Methodology.....iv
3. Publications by IPSTC.....iv
4.Welcoming Remarks.....1
5.Guest Speaker Remarks.....1
6.Opening Remarks.....3
7. Introduction of Symposium Participants.....5
8. Presentation of Research Papers.....5
8.1 Maritime Disaster Risk Reduction Preparedness along Kenya's Coastline.....5
8.1.1 Introduction.....6
8.1.2 Extent of the Problem.....6
8.1.3 Research Objectives.....6
8.1.4 Justification.....6
8.1.5 Scope.....6
8.1.6 Literature Review.....6
8.1.7 Conceptual Framework.....7
8.1.8 Methodology.....7
8.1.9 Findings.....7
8.1.9.1 County Strategy and Institutional Framework.....7
8.1.9.2 Coordination.....7
8.1.9.3 Capacity Analysis and Capacity Building.....8
8.1.9.4 Hazard Monitoring, Forecasting and Early Warning.....8
8.1.9.5 Emergency Services and Standby Arrangements.....8
8.1.10 Hypothesis Testing.....8
8.1.11 Conclusion.....9
8.1.12 Recommendations.....9
8.2 Evaluating the Level of Youth Participation in Disaster Management: The Case of Busia and Tana River Counties.....9
8.2.1 Background of the Study Area.....10
8.2.2 Statement of the Problem.....10
8.2.3 Objectives.....10
8.2.4 Justification.....10
8.2.5 Methodology.....11
8.2.6 Literature review.....11
8.2.7 Theoretical Framework.....11
8.2.8 Conceptual Framework.....11
8.2.9 Findings.....11
8.2.10 Conclusion.....12
8.2.11 Recommendations.....12
8.3 Assessing Effectiveness of Disaster Early Warning System in IGAD Member States: A Comparative Study of Kenya and Uganda.....13
8.3.1 Background of both Countries.....13
8.3.2 Statement of the Problem.....14
8.3.3 Research Question.....14
8.3.4 Objectives.....14
8.3.5 Scope and Justification.....14
8.3.6 Operational Framework.....14
8.3.7 Research Methodology.....14
8.3.8 Findings.....15
8.3.9 Conclusion.....15
8.3.10 Recommendations.....16

9. Discussant Remarks....16
9.1 Dr Patrick Maluki....16
9.2 Dr Edward Mugalavi....17
10. Summary of Plenary Session....21
11. Syndicate Presentations....23
12. Symposium Wrap-Up....23
13. Closing Remarks....24
14. Appendix....25
14.1 Attendance list....25

1. Executive Summary

The International Peace Support Training Centre (IPSTC) held a Research Symposium on 04 October 2018. The goal of the event was to have the Centre's field research findings peer reviewed by stakeholders who made up the participants and were drawn from academia, policymakers and other actors in the field of Peace Support Operations, disaster response and management, and maritime security. Most importantly, the research findings presented were reviewed by a panel of distinguished discussants that presented their reviews to the audience. The audience also made their recommendations on improving the research findings, which will be reported in IPSTC Occasional Papers.

The one-day symposium, whose overarching theme was *"Enhancing Capacity for Maritime and Infrastructure Disaster Response and Management"*, produced substantive observations, suggestions, critique and new insights meant to inform and complement the research findings. This report succinctly documents the outcome of the Symposium.

The mission of the IPSTC is to be an independent regional research, training and education centre in Eastern Africa that is responsive to peace operations training and education needs of the African Peace and Security Architecture (APSA). The research conducted at IPSTC covers a broad spectrum ranging from conflict prevention, conflict management, to post conflict reconstruction.

2. The Symposium Concept

The International Peace Support Training Centre (IPSTC) is a training and research institution whose focus is capacity building at strategic, operational and tactical levels of peace operations within the context of the African Peace and Security Architecture (APSA). The research at IPSTC contributes to capacity building of Peace Support Operations (PSO) and responds to PSO needs in the region.

The Peace and Security Research Department (PSRD) of IPSTC, is charged with the responsibility of conducting research on peace and security issues in Eastern Africa. The department has produced a number of Occasional papers and issue briefs over the last seven years. The publications focus on conflict prevention, conflict management and post conflict recovery. PSRD undertakes research for two main purposes:

a. Designing of a training curricula to support peace operations; and,
b. Contribute to the debate towards the enhancement of regional peace and security.

At the commencement of every year, PSRD begins its calendar year by formulating an agenda to inform its activities as one of its key responses to emerging issues in conflict, peace and security in Eastern Africa. This is done through a Research Agenda workshop. The IPSTC research agenda 2017 featured thematic areas related to women, peace and security and understanding emerging conflict trends, dynamics and the response strategies and mechanisms.

In 2018, the Centre undertook to conduct research on various proposed topics as part of the 2018 Research Agenda, whose overarching theme was: *"Enhancing Capacity for Maritime and Infrastructure Disaster Response and Management"*.

The IPSTC symposium was organized to provide a forum for peer reviewing, and discussing pertinent knowledge gaps in the research findings on the following topics:

- Maritime Disaster Risk Reduction Preparedness along Kenya's Coastline Mombasa and Kwale Counties.
- Youth Participation in Disaster Management: Case of Tana River and Busia Counties.
- Assessing Effectiveness of IGAD's Early Warning Systems Strategies in Disaster Management.

The research conducted was peer reviewed by academic experts and relevant practitioners in order to ensure that the research conducted by the centre was not only relevant and implementable, but also addressed the 2018 research agenda.

2.1 Objectives of the Research Symposium

a. The symposium was aimed at fulfilling the following objectives:
b. To share IPSTC research findings and outcomes with practitioners, policy makers and academia.
c. To provide opportunity to stakeholders to input into IPSTC's field research findings thereby influencing and validating the occasional papers to be published therefrom.
d. To provide a structured response to the development partner's priorities.
e. To provide a basis for evaluating the performance of the department.
f. To provide opportunity for collaboration and networking.

2.2 Expected Outcome

The symposium was intended to have the following outcomes:

a. Consolidating the comments from the peer review and consider them while editing the occasional papers.
b. Informing IPSTC training programmes and influence national and regional policies and practices on peace and security.
c. Providing a platform for disseminating field research findings intended to assist in the development of focused interventions designed to prevent, respond and manage maritime and infrastructure disasters.
d. Raising capacity and resilience of the affected communities in general.

2.3 Participants

The symposium brought together distinguished representatives from different institutions of Higher Learning; Regional Economic Mechanisms, Regional Think Tanks, and Non-Governmental Organisations.

2.4 Venue and Date

The symposium took place at the International Peace Support Training Centre, on Westwood Park Road in Karen, Nairobi, Kenya on 4 October 2018.

2.5 Methodology

The PSRD researchers presented their research findings on key topics. The findings were thereafter peer reviewed by distinguished discussants and participants present.

3. Publications by IPSTC

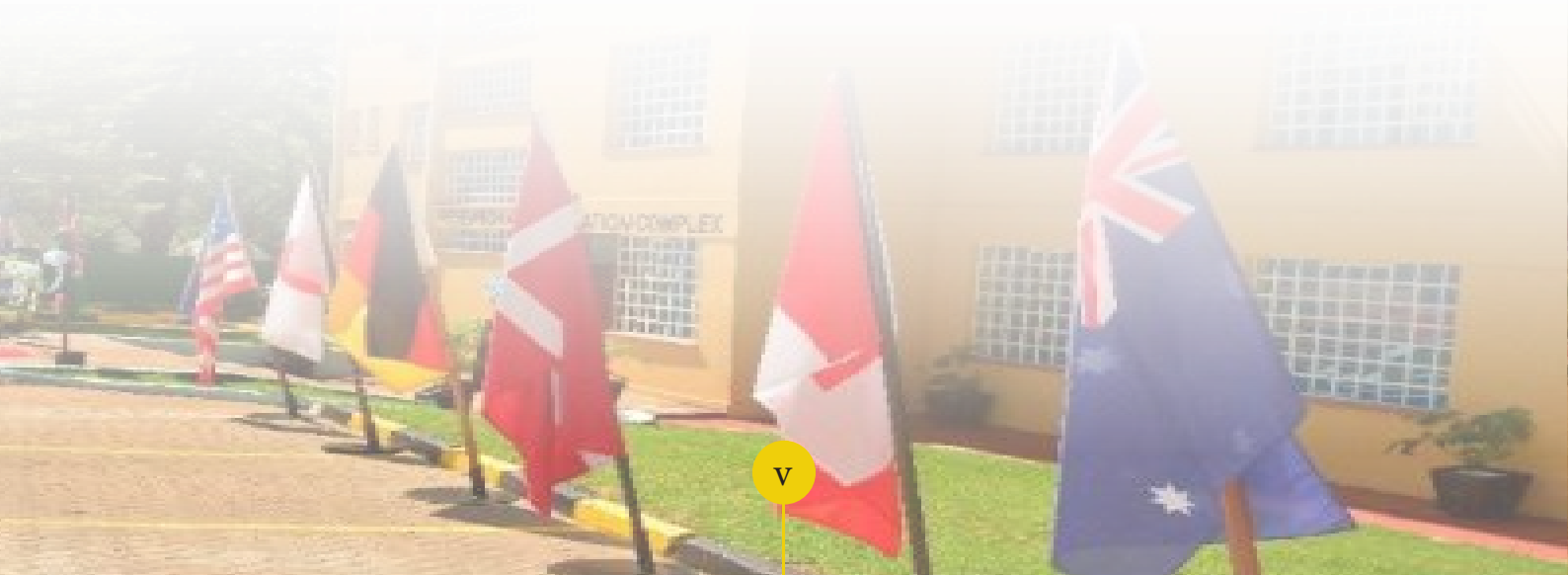
The Peace and Security Research Department (PSRD) is responsible for among other things, the production of applied research products related to peace and security policy in Eastern Africa.
Applied Research is one of the major branches of the PSRD at IPSTC, which seeks to provide intellectual input to inform theory and practice through training and policy on peace and security.

The Centre has made considerable contribution in training and research on peace support issues in the Great Lakes region and the Horn of Africa through designing of training curricular, field research and publication of Occasional Papers and most recently the publication of the Africa Amani Journal.
Occasional papers are the centre's research product aimed at informing the IPSTC training as well as policy on regional peace and security. The Occasional papers are produced annually and consist of research papers developed by the centre's researchers.
The Centre's Issue Briefs are short discussion papers, which are demand led aimed at shedding more light on current peace security issues in the region. The publications are informed by secondary data

The Africa Amani Journal was launched in December 2014, anchored on a desire to share findings on peace and security as a way of diversifying and improving the centre's research products. The Journal is heavily backed up by the continual research on complex peace and security issues by PSRD.

IPTSC seeks to ensure that the Journal will be the key medium for scholars in Africa to exchange cutting edge knowhow on emerging peace and security trends and dynamics. The sharing of knowledge will boost the IPSTC standards of research in peace and security.
In an attempt to ensure inclusivity and diversification of knowledge, the Centre encourages contribution from multiple stakeholders in peace and security in the development of the journal.

Symposium proceedings underway at the IPSTC Research & Simulation Complex conference room.



4. Welcoming Remarks

Lt Col E. A. Omollo - *Ag. Head of Research Department*

Lt Col Omollo begun by welcoming all participants to the symposium and requested everybody present to introduce themselves. To start off the symposium she gave those present a quick overview of IPSTC. She elaborated that the Centre aims at provide training and research to achieve the following among Eastern Africa Standby Force (EASF) member states:

a. Doctrinal harmonization.
b. Create interoperability.
c. Regional Critical Mass of Peacekeepers.
d. Create Networking.
e. Enhance capacity in Humanitarian Disaster management.

Lt Col Omollo added that the Centre's mission was to conduct training, education and research that will inform the military, police and civilian personnel on peace support operations in order to improve the effectiveness of response to complex emergencies. She also explained that the Centre's strategic plan for 2016-2019 required it to be proactive in addressing needs of peace actors by raising the overall level of effective responses. Lt Col Omollo noted that Disaster Risk Reduction (DRR) is one of the means of achieving this and with the help of the Government of Japan through UNDP the Centre had achieved the following:

a. Carried out Field Research and Training Needs.
b. Training Needs Assessment (TNA) on DRR and Maritime Security.
c. Developed Curricula on DRR and Maritime Security.
d. Conducted various courses on DRR and Maritime Security.
e. Sensitized Institutions and Communities.

Lt Col Omollo concluded by referring participants to the overarching theme of the Symposium *"Enhancing Capacity for Maritime and Infrastructure Disaster Response and Management"* and outlined the objectives of the symposium which were:

a. To share IPSTC research findings and outcomes with practitioners, policy makers and academia.
b. To provide opportunity to stakeholders to input into IPSTC's field research findings thereby influencing and validating the occasional papers to be published therefrom.
c. To provide a structured response to the development partner's priorities.
d. To provide a basis for evaluating the performance of the department.
e. To provide opportunity for collaboration and networking.

Lt Col Omollo proceeded to invite the guest speakers to give their remarks.

5. Guest Speaker Remarks

Dr Zeinabu Khalif - *Country Director, UNDP*

Dr Khalif stated that it was her pleasure, on behalf of the UNDP, to attend the symposium which was a key milestone in showcasing and disseminating new knowledge, research findings emanating from the project on capacity development for peace and disaster management at the boarders of Kenya. She elaborated that this was a project, which was supported by UNDP in conjunction with IPSTC starting in 2009. She added that the project focused on peace operations, disaster management and countering violent extremism. Dr Khalif explained that the project aimed to mitigate the risks of disasters and violent conflicts in Kenya's maritime domain and build on the achievements as well as lessons learnt from previous projects.

It was funded through the Government of Japan at an estimated USD 975 000.

Dr Khalif alluded that through this project, the IPSTC would develop three research products with the theme of maritime disaster management namely:

- Operational framework for maritime disaster management.
- Training of 422 government officers on maritime and border security.
- Economically empowering of over 250 youth at risk of radicalisation thus reducing the potential for violent extremism.

Dr Khalif noted that significant progress had been made towards achieving the above objectives. She added that the symposium, as one of the key activities under the project was aimed at sharing knowledge, through field research. She further explained that the symposium's focus in 2018 would be on effective maritime disaster management as well as youth participation in disaster management in Kenya. She emphasised that this was critical given the country's high exposure to maritime hazards and high exploitation of the youth, which makes them susceptible to violent extremism. She stated that the output from the research activities, delivered under the project, would serve to improve Kenya's ability to detect and mitigate disasters and acts of violent extremism in the Country. She highlighted that through the UNDP externship program 2018/19-2022, UNDP was committed to support the process of disaster risk management and conflict prevention, including prevention of violent extremism. Additionally, she stated that UNDP looked forward to work with both levels of government, county and national, to ensure economic development as envisioned in vision 2030 alongside the Kenya big four agenda. She hoped that the partnership between IPSTC and UNDP would continue to grow in the coming years. Lastly, Dr Khalif sincerely thanked the government of Japan that had continuously supported the work of IPSTC and all participants for their attendance and wished them successful deliberations during the symposium.

Cmdr. Masaki Nakagome - *Defence Attaché, Embassy of Japan in Nairobi*

Cmdr. Nakagome introduced himself as the General Defence Attaché Kenya, Tanzania, Uganda and Somalia. He then proceeded to welcome all the participants to the symposium whose focus was on the capacity for maritime infrastructure and disaster response and management. He stated that as a nation prone to earth quakes, typhoons and tsunamis, Japan placed great importance on maritime disaster response and management. He explained that the Government of Japan had heavily invested in early warning systems and was of the view that disaster management lies in the response of its people. The Government of Japan has therefore developed customised solutions with regards to management of disaster response in Kenya.

Cmdr. Nakagome took the opportunity to thank the Government of Japan's partners, namely, IPSTC and UNDP. He expressed optimism that the symposium would contribute to developing capacity and frameworks in the area of maritime infrastructure response and management in the region. He concluded by stating that the Government of Japan was committed to supporting programs and frameworks that seek to promote peace and security in the region and all over the world.

6. Opening Remarks

Col F. Kihanya - *Commandant PCSS*

Col Kihanya welcomed all those present on behalf of Brig Patrick Nderitu, the Director IPSTC. He then requested the audience to ponder on what Kenya would have done in a scenario such as the tsunami that took place in Indonesia, killing approximately 1,000 people. He recognised the presence of Comm. Masaki, Dr Khalif, the discussants and all participants. He then highlighted the theme of the symposium "Enhancing Capacity for Maritime and Infrastructure Disaster Response and Management". He expressed his sincere gratitude to the Government of Japan and UNDP for providing the required resources for the disaster risk reduction research that the Centre undertook. He elaborated that the theme of the symposium spoke to the Centre's action plan and added that the Centre was committed to promoting disaster risk knowledge, engaging with the society as a whole, promoting disaster risk investment and developing disaster risk management strategy in consultation with various stakeholders. He emphasised the need to implement the Sendai Framework as set out within the action plan. The Sendai Framework for Disaster Risk Reduction (2015-2030) is an international document, which was adopted by UN member states between 14th and 18th of March 2015 at the World Conference on Disaster Risk Reduction held in Sendai, Japan and endorsed by the UN General Assembly in June 2015.

Col Kihanya expounded that the Centre firmly believed that the involvement and action of stakeholders at the regional and local level was crucial for supporting the design and implementation of these strategies. He stated that the attendance of the participants was a testimony to the fact that various institutions shared this goal. He explained that it was indeed worrying that each year, the world contends to the loss of lives, destruction of property and irredeemable psychological damage caused by disasters. He then referred participants to the tragedy that took place at Nakuru as a result of the Solai Dam disaster that claimed numerous lives.

He added that it was our responsibility to think of ways and means to develop an effective disaster response mechanism. He added that creating awareness on the existing structures, strategies and institutional frameworks was critical. He referred participants to a report by the United States Agency for International Development (USAID) which spotlights the likelihood of worsening climate change as well as increasing intersection between global fragility and climate change. He then stressed on the need to be increasingly aware of the vulnerabilities we face from potential disasters in the region.

Col Kihanya stated that the Centre was committed to join in action, coordination and building resilience. He added that it aims to add value that would assist planners in the implementation of some urban and rural disaster responses. In particular, the Centre's endeavour was to ensure that Coastal towns and inland water bodies were more resilient. He concluded by expressing the Centre's keenness to continue working with all those present, as stakeholders, in the interest of the region. He then declared the symposium officially opened.

7. Introduction of Symposium Participants

Professor Timothy Gatara
IPSTC Senior Researcher and Symposium Moderator

Prof. Gatara welcomed everybody once again to the symposium. He took the opportunity to appreciate the participants present and the fact that there were policy makers, practitioners and researchers who would contribute and enrich the intellectual discussions. He referred participants to a section on a report on disaster management that stated that natural disasters have taken place since time immemorial and have been as a result of catastrophic events. He stated that the lead cause of catastrophic events in the past 20 years was human beings, that is, manmade. He elaborated that human beings were responsible for global warming through depletion of the ozone layer, which resulted in environmental changes and extreme weather conditions. He then put this into perspective by mentioning the earthquake that took place in Haiti in 2010 measured at 7.3 (Richter Scale) resulting in the death of over 200, 000; the tsunami in 2004; hurricane Katrina and the European heat wave that affected nearly 700, 000. He elaborated that these statistics were not meant to instil fear but to stimulate discussions and questions as to whether we can predict disasters better, create better early warning systems and prepare better.

8. Presentation of Research Papers

Three researchers from the Peace and Security Research Department (PSRD) presented their research findings based on priority areas identified by IPSTC which sought to address disaster response and management.

The participants were requested by Prof. Gatara to keenly make observations and note the important issues raised by the presenters, in order to effectively offer a constructive critique for each presentation during the plenary sessions.

8.1 Maritime Disaster Risk Reduction Preparedness along Kenya's Coastline

Mr Joseph Kioi Mbugua & Maj. S D Mwachinalo

8.1.1 Introduction

Mr Mbugua started off by explaining that the focus of the study was on the Kenyan Coastline and the ecosystem in Mombasa and Kwale Counties. He elaborated on the key concepts in the research paper and stated that Maritime Disaster referred to a serious disruption of the functioning of the society within the coastal domain while Maritime Disaster Risk Reduction (DRR) referred to national and county capacity to respond effectively to natural and man-made coastal disasters. He added that Disaster Risk Reduction Preparedness referred to national and county knowledge and capacity to anticipate and respond effectively to the impact of likely, imminent or current coastal hazards or conditions. He elaborated that disasters pose significant challenges to developing countries through the losses incurred and diversion of funds from development to humanitarian relief (UNISDR, 2015). Additionally, he noted that coastal populations are more vulnerable disasters due to the high rate of poverty, urbanization, poor social services, weak institutional frameworks and low capacity in disaster risk reduction (Connors & Ayobi, 2016; UNESCO, 2012).

8.1.2 Extent of the Problem

Mr Mbugua stated that there is limited information on the state of current disaster risk reduction preparedness in the coastal counties of Mombasa and Kwale. He noted that Kenya lacks a culture of disaster preparedness and most responses are reactive (DI, 2017). Also, flooding from sea level rise at the Kenya coastal is projected to affect about 86 000 people per year and may lead to erosion and wetland loss at an annual cost of about US$ 58 million by 2030, rising to US$ about 313 million by 2050 (SEI, 2009).

8.1.3 Research Objectives

Mr Mbugua outlined the research objectives of the study as follows:

1. To analyse disaster risk reduction preparedness governance in Mombasa and Kwale Counties.
2. To evaluate disaster preparedness capacity for effective response and recovery.
3. To compare and contrast Mombasa and Kwale County's disaster risk reduction preparedness framework.
4. To appraise options for enhanced effectiveness of disaster preparedness.

8.1.4 Justification

Mr Mbugua explained that the findings from the study would provide knowledge that could be used by policy makers to raise disaster preparedness at the county level, provide insights and identify gaps to inform practitioners as well as evidence based DRR curriculum and courses development at IPSTC and other institutions.

8.1.5 Scope

Mr Mbugua explained that the tools of analysis for the study were based on the Sendai Framework for DRR namely:

- Governance.
- Contingency plans.
- Communication of Strategy and Early Warning System.
- Resources knowledge and skills.
- Community Participation.

8.1.6 Literature Review

Mr Mbugua stated that the global approach of disaster risk governance and disaster preparedness is informed by the UN Yokohama DRR Strategy (1994); the Hyogo Framework of Action (HFA - 2005-2015) and the Sendai Framework for DRR (SFDRR – 2015-2030). He added that the Africa Union (AU) closely follows the Sendai Framework through extended programme of action that caters for 2005-2015 and 2015-2030 UNISDR framework (AU, 2016). Kenya follows both the global and regional frameworks.

In terms of empirical literature he stated that Lumbroso (as cited in Marchezini et al, 2017) did a study on early warning systems in Africa, Caribbean and South Asia in 2016. He explained that Lumbroso's (2016) study was however a macro global focus study limited to Early warning systems (EWS) and therefore lacked details of a micro-DRR preparedness study. Additionally, Development Initiatives (2017) did a review of Kenya's preparedness against natural disasters. He noted that the study missed the man-made disasters that also inform vulnerability especially in the coastal areas.

8.1.7 Conceptual Framework

Mr Mbugua explained that the study sought to look at how effective communication by agencies tasked with DRR is with communities with regards to outcome expectancy and level of preparedness.

8.1.8 Methodology

Maj. Mwachinalo then broke down the methodology as follows:

- Research Design was a descriptive survey that was cross sectional in nature.
- The study site was Mombasa and Kwale Counties.
- The study population involved 41 institutions.
- The sample size and sampling procedure entailed stratified random that sampled 31 institutions. These included actors in the national and county governments, private enterprise, non-governmental organisations, civil society organisations and the local community. He added that there were a total of 148 respondents, 94 from Mombasa and 54 from Kwale.
- Data Collection Method and Tools - Likert Type Questionnaire and Structured qualitative interview.
- Data Analysis - The quantitative data was analysed through SPSS and the qualitative through Summative Content Analysis.
- Validity and Reliability - Methodological Triangulation and Cronbach Alpha statistic.
- Ethical Considerations were based on the IPSTC research guidelines.

8.1.9 Findings

Maj Mwachinalo stated that the research spoke to two priorities in the Sendai Framework namely, disaster risk governance and strengthening disaster preparedness. To analyse disaster risk governance, he explained that the study focused on the following four indicators:

- County Strategy and Institutional Framework.
- Legislative Framework.
- Coordination.
- Contingency Plans.

8.1.9.1 County Strategy and Institutional Framework

Maj Mwachinalo explained that the study sought to measure the degree to which disaster preparedness is factored in development and planning within these counties. He stated that there was little evidence of a deliberate strategy in both counties. He noted that the institutions tasked with DRR were essentially ad hoc. He elaborated that this amounted to a responsive type of strategy as opposed to one with prior planning. He added that there was lack of involvement from all stakeholders in Mombasa and Kwale in so far as DRR planning was concerned. He further observed that such involvement, if carried out, should involve the most vulnerable groups - women, youth, the elderly and the disabled.

8.1.9.2 Coordination

Maj Mwachinalo noted that coordination was very important as it helps increase the robustness of disaster risk response and reduce replication of activities in both counties. He then stated that Mombasa County has two disaster management committees; one made by the county government and another by the national government.

He noted that the study found that there was little semblance of the flow of information between them. Indeed, the study noted that coordination was fragmented with individual institutions taking individual; for example, there was an Oil Spill Management group, which consist of the Kenya Maritime Authority and the Kenya Navy among other actors. He then explained that Kwale had a mechanism known as the County Steering Group that brought together the national government and the county government to coordinate activities.

However, the study showed that meetings between the two arms of government were irregular and as a result coordination was poor. It was observed that antagonistic political environment had a huge implication on the coordination of activities in both counties.

8.1.9.3 Capacity Analysis and Capacity Building

Maj Mwachinalo explained that analysis of capacities aimed to establish how resources and systems have been built over time to strengthen disaster preparedness. He stated that the two counties did not have capacity or resource ledgers. He elaborated that Mombasa County government and Kenya Red Cross have partnered to build capacities in so far as DRR is concerned. Through the partnership they have set up an Emergency Operation Centre where the Kenya Red Cross is assisting the county to build its capacity to develop standard operating procedures (SOPs). He added that the Kenya Red Cross has also trained the Ward Administrators in each ward. Kwale County has partnered with organisations such as the UNDP to come up with business incubation Centres to help the county reduce levels of poverty. The devolved government has sought to build the resilience of the community through a number of initiatives such as a bursary program. Despite this, he emphasised that there was limited planning and budget allocation in both counties with regards to capacity building and analysis.

8.1.9.4 Hazard Monitoring, Forecasting and Early Warning

Maj Mwachinalo stated that the analysis of hazard monitoring, forecasting and early warning sought to establish how events that can precipitate humanitarian crisis are anticipated. He explained that both counties exhibited some linkages with the Kenya Meteorological Department but not with the seismic monitoring department. He explained that individually there are organisations that deal with early warning such as the Maritime Rescue Coordination Centre, which is under the Kenya Ports Authority. He noted that even though there was a linkage between hazard monitoring, forecasting and early warning to institutions of higher learning, there was no formal collaboration between such institutions and the respective county governments departments.

8.1.9.5 Emergency Services and Standby Arrangements

Maj Mwachinalo explained that the interrogation of the emergency services and standby arrangements sought to establish the bureaucratic, human, physical and logistic mechanisms in stand by for disaster response arrangements. He observed that the two counties showed little evidence of the existence of an Emergency Operations Centre (EOC) but there were ad hoc mechanisms for response. He expounded that in Mombasa, there was an EOC within the Inspectorate Department of the Mombasa County Government however other respondents were not aware of its existence. On its part, Kwale County did not have an EOC but had tasked a committee to develop an EOC.

8.1.10 Hypothesis Testing

Maj Mwachinalo explained that hypothesis testing was aimed at facilitating a comparison of the responses from Mombasa and Kwale Counties and establish if there were significant differences between them. He mentioned that the Mann-Whitney U Test was utilized and that the significance levels (alpha score) used was 0.05, which corresponded to a confidence level of 95%. Of the categories tested in so far as DRR was concerned four categories, that is, six statements had a rejected null hypothesis.

However, Maj Mwachinalo explained that the focus would be on one category namely, Hazard Monitoring, Forecasting and Early Warning. In this category, the rejected null hypothesis was the distribution of communities and other civil society stakeholders who were active participants in all aspects of the development, operation, training and testing of early warning systems which was the same across the categories of the County, at a significant level of 0.09. He explained that this meant that there was a 9% chance of making a mistake if anyone was to believe otherwise. This meant that in terms of perception with regards to DRR both counties were the same.

8.1.11 Conclusion

Maj Mwachinalo stated that the disaster risk governance in both counties could be rated as low. This is based on the fact that legislation operates in absence of applicable polices and the funding mechanism is limited. Additionally, the level of disaster preparedness was similarly low in both counties and a culture of preparedness had not been established hence most responses were reactive. In sum, both Counties are generally comparable in their disaster risk governance and preparedness.

8.1.12 Recommendations

Maj Mwachinalo outlined the following as the recommendations for further research:

- Maritime DRR preparedness in Marine Protected Areas.
- Coastal climate change and DRR Adaptation for Community Resilience.

Other proposed recommendations include:

- Development of an Integrated DRR Strategic Governance Architecture.
- Establishment of a fully-fledged EOC at the County to Enhance Coordination during Implementation.
- Conducting Training Needs Assessment on DRR for Mombasa and Kwale and MTTs.

8.2 Evaluating the Level of Youth Participation in Disaster Management: The Case of Busia and Tana River Counties

Col Nduwimana Donatien

Col Nduwimana begun by explaining that the notion of youth participation in disaster management was not new and has the support of numerous policy documents which include: a United Nations Security Council Resolution (UNSCR/2250) on Youth, Peace and Security; African Youth Charter; East Africa Community (EAC) Youth Policy; The European Commission White Paper on Youth (2001) and Sendai Framework for Disaster Risk Reduction 2015–2030. He added that the youth constitute an important human resource for a nation (Augustine, 2011). Indeed, disaster Management requires youth participation to effectively manage the impact of disasters (Rozario, 2011). He explained that the working definition of youth was:

- Persons between the ages of 15 and 24 years as defined by the UN.
- A person between 15 and 35 years as defined by the African Youth Charter.
- A person between 18 years and 34 years as defined by the Constitution of Kenya

Col Nduwimana explained that participation meant the practice of engaging in decision-making process on issues affecting one's life and the life of the community in which one lives (Ben-Attar, 2010) while Disaster Management was the systematic process of using administrative directives, organisations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of disaster (GoK, 2009).

He then outlined the disaster management process as follows:

- Preparedness.
- Response.
- Recovery.
- Risk Mitigation.

8.2.1 Background of the Study Area

Col Nduwimana stated that most of Busia County fell within the Lake Victoria Basin and each year flooding from the Budalangi River that drains into it, results in damages to property and loss of life (Kenya Natural Disaster Profile). He also mentioned that about 40% of the County's population was below the age of 15 (NCPD, 2017). With regards to Tana River, he stated that flooding and drought were regular problems facing the county. This is in addition to occasional conflicts between farmers and nomadic communities over access to water (Gakuria, 2013). Col Nduwimana noted that the youth constituted 65% of the total population in Tana River (GoK, 2017).

8.2.2 Statement of the Problem

Col Nduwimana acknowledged the fact that the youth in Busia and Tana River were greatly affected by disasters (Huho & Musyimi, 2016). The youth experience recurrent disruptions in their family life, education, housing, social network, access to healthcare and income. He added that despite their numerical superiority and their potential capacity, the youth were the least represented in decision-making spheres including disasters (EAC Youth Policy, 2013).

8.2.3 Objectives

Col Nduwimana outlined the objectives of the study as follows:

1. To analyse strategies applied to include youth in disaster management.
2. To assess the level of youth participation in disaster management.
3. To determine the challenges and opportunities for effective youth participation in disaster management.

8.2.4 Justification

Col Nduwimana explained that the justification for the study was to increase awareness on the importance of youth participation in disaster management processes as well as make recommendations on strategies to promote ownership in disaster management interventions. The study also endeavoured to highlight critical areas that the counties of Busia and Tana River needed in order to address and enhance youth participation in disaster management.

8.2.5 Methodology

Col Nduwimana outlined the research methodology as:

- The study area was the county of Busia and Tana River.
- The study design used was a descriptive survey.
- The study populations consisted of youth between 18-34 years old.
- Data Collection Instruments employed consisted of Key Informant Interviews (KIIs) and Focus Group Discussion (FGDs) guides.
- For data analysis, descriptive statistics were applied to summarize quantitative data. Imaging themes from FGDs were drawn to support the qualitative data.
- Ethical considerations included informed consent from respondents and permission from the relevant authorities.

8.2.6 Literature review

Col Nduwimana observed that the youth continue to be considered as victims or passive beneficiaries of assistance during disasters (INEE, 2013). In large-scale disaster situations, adult decision-makers rarely consult or engage the youth in any systematic and meaningful ways (USAID Youth Policy, 2012). Based on the Triennial World Organization of the Scout Movement 2005 Report, if provided with moral, financial, and technical support, the youth can make important contributions to social cohesion, reconstruction, and the maintenance of peace.

8.2.7 Theoretical Framework

Col Nduwimana stated that the study looked into Hart's Ladder of Participation, which provides that manipulation, decoration and tokenism amounted to non-participation. The theory also states that participation entails instances where the youth are:

- Assigned but informed.
- Consulted and informed.
- Involved in the decision making with regards to adult initiated ventures.
- Guided and directed in youth-initiated ventures.

8.2.8 Conceptual Framework

Col Nduwimana noted that the study focused on the youth's skill and knowledge, initiatives, creativity and rights with regards to the disaster management process in so far as, preparation, response, recovery and mitigation was concerned.

8.2.9 Findings

Col Nduwimana elaborated that the Busia County Integrated Development Plan (CIDP) 2018-2022 provides for:

- Empowerment of youth in decision-making.
- Youth economic empowerment and participation.
- Youth social development.
- Initiatives to empower the youth.
- Reservation of tenders.
- Construction of youth empowerment centres.

He also explained that the county partnered with the Kenya Red Cross, VIRED, CREPP, World Vision and ADRA to enhance youth involvement in disaster management.

Col Nduwimana explained that the first Tana River County Integrated Plan 2018-2019 highlighted the commitment of the county government to invest in Youth by providing for:

- Social welfare services.
- Youth development.
- Gender and community services.

He added that the Development Strategy for Northern Kenya and other Arid Lands also sought to expand economic and social opportunities for youth and inform the young people about training and employment at national and county levels.

Col Nduwimana highlighted the challenges that county of Busia faced with regards to youth participation that include:

- Political Enticement.
- Lack of policies and coordination framework.
- Lack of Mentorship.
- Lack of resources and equipment.
- Lack of involvement in planning and coordination.
- Lack of skill in disaster management.

The challenges outlined with regards to the county of Tana River include:

Conflict.

- Lack of a coordination framework.
- Poor infrastructure, resources and equipment.
- Lack of skills in disaster management.
- Lack of Mentorship.
- Lack of involvement in planning and coordination.

In regards to youth participation in disaster management, Col Nduwimana observed that in both counties, the study found out the following opportunities:

- Increased Number of youth - The youth can be used to provide labour in disaster management processes.
- Youth creativity and initiatives.
- Implementation of the Kenya Youth Policy.
- Utilization of Youth representatives in politics.
- Utilization of the "Nyumba Kumi" initiatives for mobilization of youth in disaster management.

8.2.10 Conclusion

Col Nduwimana stated that youth participation in the disaster management process in Busia and Tana River counties is low and they are mostly involved in response and recovery phases to respond to immediate needs depending on the severity of the disaster. He emphasised that their absence in decision–making spheres, planning and coordination fora demonstrate the lack of meaningful participation of youth in all phases of disaster management. He added that the reasons mentioned for exclusion of the youth include lack of knowledge/skills on disasters, lack of resources, corruption and lack of engagement by the county leaders.

8.2.11 Recommendations

Col Nduwimana concluded by outlining the following recommendations derived from the study:

- Establishment of a policy at the county level on youth participation in disaster management.
- Promoting partnership with specialized institutions for youth capacity building in disaster management.
- For youth skill-building, acquiring knowledge and tools to lead and engage in disaster management activities.

Recommended areas for further research include:

- Conducting training needs assessment (TNA) on youth knowledge in disaster management.
- Conducting a study to establish the importance and capacity of "Nyumba Kumi" initiative in disaster management.

8.3 Assessing Effectiveness of Disaster Early Warning System in IGAD Member States: A Comparative Study of Kenya and Uganda

Dr. Eunice Njambi

Dr Njambi explained the concept of early warning systems by breaking down the phases of disaster management. She started off with the mitigation phase that entails public education awareness, hazard and vulnerability assessment as well as improved infrastructure. The second phase was the preparedness phase. She elaborated that this phase consisted of national emergency telecommunication and response plans, training exercises, early warning and standard operating procedures. This was followed by the response phase that entails communication, coordination and saving lives. Lastly she expounded on the recovery phase, which consists of restoring, telecommunication, rebuilding infrastructure, improving lives as well as recovery and rehabilitation of other services.

Dr Njambi elaborated that effective early warning systems (EWS) save lives, protect livelihoods and development gains. Global DRR frameworks such as the Hygo framework (2000-2015) and the Sendai framework (2015-2030) recognize EWS. Regionally, EWS are recognised under the 2004 African Union Regional Strategy for DRR; the 2012 East African Community DRR Management Strategy; the Kenyan Disaster Management policy (GoK, 2009) and the Ugandan National Policy for Disaster Preparedness and Management (GoU, 2010).

8.3.1 Background of both Countries

Dr Njambi referred participants to a disaster map of Kenya and explained that, the main disaster in Kenya was drought and only 17% of its land is suitable agriculture. On the other hand, Uganda's main disaster was floods; 37% of its land is arable.

8.3.2 Statement of the Problem

Dr Njambi stated that both Kenya and Uganda had established EWS, however, the countries continue to experiences increased vulnerabilities with populations exposed to natural disaster, increased new hazards and costs of disasters (INFORM, 2018). She elaborated that the disaster risk index for Kenya is 5.9 and 6 for Uganda. Based on Sendai framework, EWS are supposed to address the above challenges by making sure they are multi hazard and people centred.

8.3.3 Research Question

Are the disasters EWS in Kenya and Uganda effective?

8.3.4 Objectives

Dr Njambi outlined the objectives of the study as follows:

1. Examining disaster occurrences between 2008 to 2017 in Kenya and Uganda.
2. Examining the institutional structures responsible for EWS in Kenya and Uganda.
3. Assessing the national effectiveness of four EWS components in Kenya and Uganda.
4. Assessing the achievements of the disaster EWS desired goals in Kenya and Uganda.

8.3.5 Scope and Justification

Dr Njambi stated that the study focused on Kenya and Uganda national disaster management (NDM) institutions in charge of the four EWS components. She added that the findings from the study would inform the EWS - strengths, weakness, opportunities and threats – within the four components stated as objectives. It would also inform priorities for EWS national/community institutional, capacity building, programing and resources allocation.

8.3.6 Operational Framework

Dr Njambi elaborated on the factors that influence EWS that include:

- Knowledge on Hazard Data - Specifically collection, analysis and management.
- Warning Service Hazards - In terms of monitoring, evaluation and forecasting.
- Communication and Dissemination - With regards to risk communication, warning communication and household warning.
- Response Capability at both the National and Community level - Specifically knowledge, skill and preparedness to act.

Dr Njambi emphasised that community involvement in all the above would be more likely to result in effective EWS and lead to:

- Reduced disaster.
- Resilience building.
- Community usage of EWS.
- The community providing continuous feedback.

8.3.7 Research Methodology

Dr Njambi then outlined the research methodology as follows:

- The study population included national public service officers/practitioners dealing with disaster EWS.
- The sampling method was purposive.
- The data collection entailed mixed methods namely, KIIs, FGDs, Content analysis, United Nations Office for Disaster Risk Reduction (UNISRD) disaster time series data.
- Data analysis included Quantitative descriptive analysis and Qualitative summarized emerging themes.
- Quality control and ethical consideration: Ethical clearance, consent from respondents, tool and content validity.

8.3.8 Findings

It was noted that both countries experienced the height of drought and floods respectively, between the years 2009 and 2011. Dr Njambi took participants through the EWS institutional framework in Kenya. She elaborated that under the draft disaster management policy, EWS is proposed to be a directorate under disaster management coordination. This is unlike Uganda where the institution on EWS is already established and provided for by the law. Uganda also has EWS up to the community level. She then explained that while looking into the effectiveness of disaster risk knowledge, the study looked into 21 variables collapsed under five main ones namely:

- Exposure, vulnerabilities.
- Capacities and risks, identifying.
- Roles and responsibilities of stakeholders.
- Risk information consolidations.
- Incorporating risk information properly into the EWS.

Based on these variables, the level of effectiveness was found to be 63% for both countries. In regards to the monitoring and forecasting component, Dr Njambi mentioned that the study looked at 25 variables under three main ones namely:

- Monitoring systems in place.
- Institutional forecasting and warning services mechanisms in place.
- Multi-hazard monitoring and forecasting services with scientific and technological basis.

The level of effectiveness with regards to the above variables was at 42%, which was fairly low. With regards to the dissemination and communication component, Dr Njambi noted that the study looked at 22 variables condensed into three namely:

- EWS organizational decision-making processes.
- Operational communication systems equipment in place.
- Impact of the communication based effective prompt action by the local community.

The finding here was that Uganda was better off than Kenya based on the fact that it had a 24 hour free medium of communication.

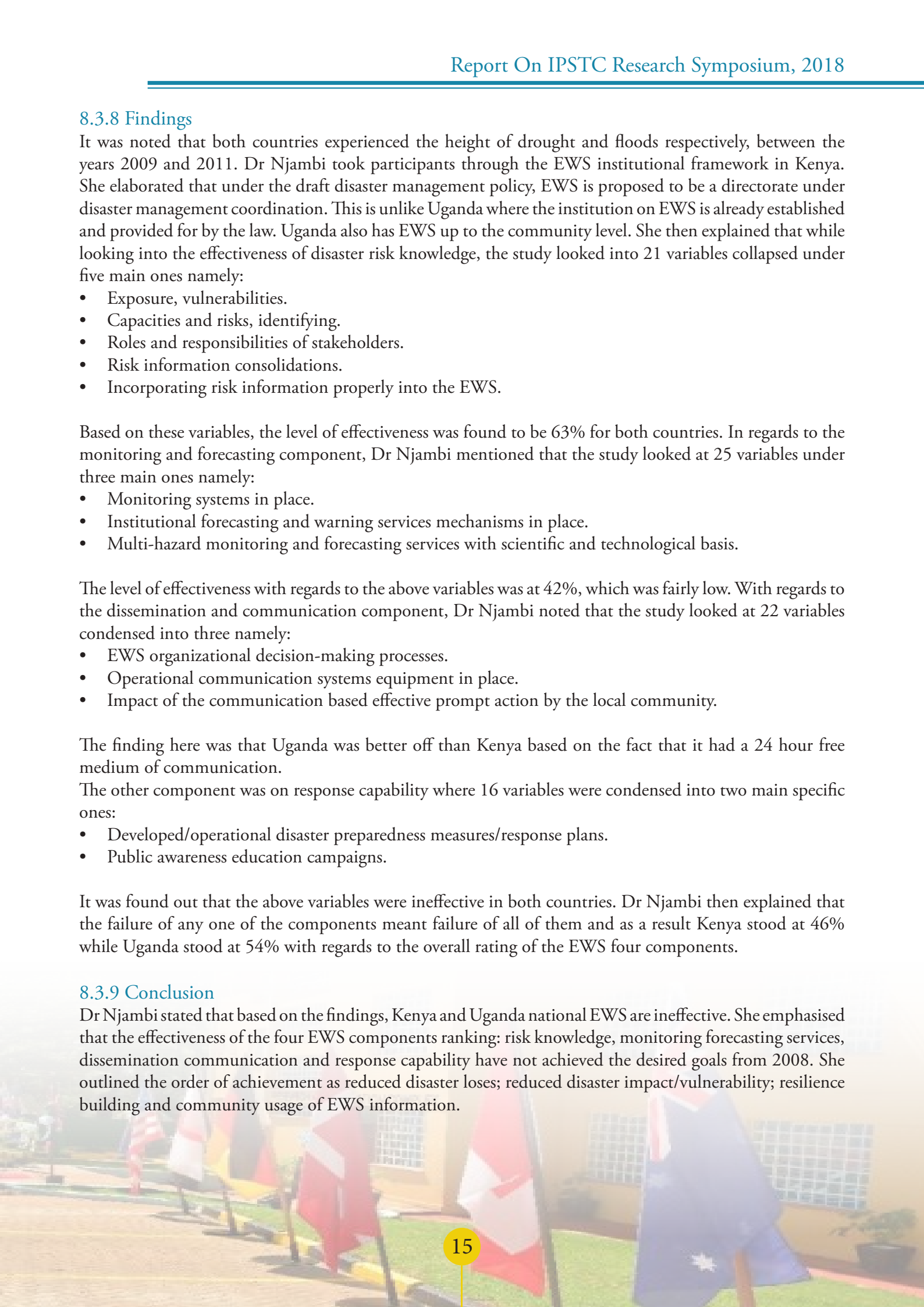
The other component was on response capability where 16 variables were condensed into two main specific ones:

- Developed/operational disaster preparedness measures/response plans.
- Public awareness education campaigns.

It was found out that the above variables were ineffective in both countries. Dr Njambi then explained that the failure of any one of the components meant failure of all of them and as a result Kenya stood at 46% while Uganda stood at 54% with regards to the overall rating of the EWS four components.

8.3.9 Conclusion

Dr Njambi stated that based on the findings, Kenya and Uganda national EWS are ineffective. She emphasised that the effectiveness of the four EWS components ranking: risk knowledge, monitoring forecasting services, dissemination communication and response capability have not achieved the desired goals from 2008. She outlined the order of achievement as reduced disaster loses; reduced disaster impact/vulnerability; resilience building and community usage of EWS information.



8.3.10 Recommendations

Dr Njambi expounded on the following recommendations based on the study findings:

- National/County/District governments should develop policy papers on resilience building based on specific disaster.
- EWS to focus on institutional capacity buildings (ability, authority, resources, responsibility) from the community, district, county, national levels.
- At the community level, EWS programs needs to be conducted in school.
- IPSTC, NDOC, OPM office Department of disaster preparedness and Management, Red Cross need to engage in joint research especially with regards to conducting training needs assessment (TNA) in building community resilience as well as curriculum development for building community resilience.

The following areas were recommended for further research:

- Community KAP on EWS.
- TNA on capacity (ability, authority, resources and responsibility) of the National/County governments on building community resilience.

9. Discussant Remarks

After the Centre's researchers had presented their research findings, Prof. Gatara invited the discussants to make their remarks. The discussants were:

- Dr. Patrick Maluki
- Dr. Wycliffe Oboka
- Prof John Obiri.

9.1 Dr Patrick Maluki

Dr Maluki stated that he would give comments on the presentation on Maritime Disaster Risk Reduction Preparedness along Kenya's Coastline. He started off by stating that chapter one of the study was very timely and well structured. He added that it also filed a gap in so far as all disaster management literature in Kenya, specifically, with regards to Mombasa and Kwale. However, he noted that Chapter one should also give a briefly overview of the study and in particular discuss the concern in regards to the subject matter under discussion. Dr Maluki observed that the first chapter as opposed to focusing on the status quo, the focus was on defining the concept of the work and as a result, the opening of chapter one needed to be improved in order to focus on the current status on the ground in relation to the study.

In the statement of the problem which should convey the 'why' aspect of the research, the approach should be to look at the casualties of disaster preparedness. He then stated that the same should be tightened by focusing on the casualties, losses and destruction of properties in order to precisely and properly contextualise the problem. He added that the methodology should reflect what was done and not what the researchers planned to do. He also mentioned that the typos in the document should also be worked on.

Dr Maluki elaborated that the theoretical literature did not comprehensively capture the salient issues in the topic of the study. Based on this, he stated that the theoretical framework needed to be reviewed in order to bring out important concepts such as, how the society reduces disaster risk based on the fact that it is the main concern of the study. He added that the mere mention of the Sendai and Hyogo Framework without substantiating these key concepts was not enough.

He further stated that it was important to explain what the term resilience meant or referred to. It was observed that a detailed literature review on disaster risk reduction would be essential to build a strong foundation for the study.

Dr. Maluki commended the researchers on chapter three and four of the study namely, the methodology and data analysis. He stated that they were well treated and were rich. However, he noted that chapter four of the study contained a statement to the effect that gender representation and formulation was missing in the two counties and this was contradicted by a previous statement which stated that all activities were age and gender desegregated and actions were taken to ensure access to services by both men and women who were equally represented in the planning stages. This contradiction raises the question as to whether gender representation is really a problem in the disaster management strategies of these counties. He stated that another concern with regards to this chapter was the failure to utilise the theoretical framework in the analytical section; for example, the theoretical framework mentioned the community engagement theory, which was not employed as a thread to analyse the findings. He emphasised that it was of utmost importance to combine statistics obtained from the study with theoretical framework.

Dr Maluki acknowledged that effort was made to bring out the voices of the people in the analytical chapter. However, he noted that most of the voices brought out were with regards to Key Informants leaving out the voices of other respondents. He then mentioned that a balance was very important. He stated that the study population was quite comprehensive, however, the data analysis showed that more than 70% was government respondents, which showed a likelihood of bias. On chapter five which contains the summary, conclusion and recommendations, he concluded by stating that the only expectation that was not met was the fact the summary and conclusion did not adequately speak to the hypothesis. The reader needs to be informed on the areas that need to be worked on.

9.2 Dr Edward Mugalavi

Dr Mugalavi was tasked to review the study evaluating the level of youth participation in disaster management: the case of Busia and Tana River Counties. He started off by explaining that the topic was relevant to the area of disaster risk reduction and that the research paper could be developed into a training manual for disaster risk reduction managers. He mentioned that the study should include preliminary sections (executive summary or abstract summarizing the paper) and noted that the definition of terms should be moved to this section. He stated that the study should highlight the context in which youth participation is used in the study and that the definitions of terms to suit the current study should be contextualized. He also stated that the researchers should create a section for list of acronyms and abbreviations as well as provide precise locations, latitude, longitude and altitude, in Busia and Tana River Counties where the fieldwork was conducted. He added that the study should indicate the study population and put more emphasis on flood disaster as opposed to other types of disasters.

He emphasised that every aspect of the study should be linked to the title.

With regards to the focus and scope, Dr Mugalavi noted that the scope of the study focused on flood disaster despite the fact that the title suggests that the study generally considered various disasters. He elaborated that this required clarification. He also noted that it was not clear what the unit of analysis was or who were the main respondents in the study.

In so far as the statement of the problem, Dr Mugalavi mentioned that this should be specific to the study area site/locations as the same is too generalized. He then made an inquiry as to whether there was any documentation on youth participation in disaster management in Busia and Tana River counties as this was not clear in the statement of the problem. In the justification section of the study, he explained that the focus should be on the role of youth in disaster management in Busia and Tana River counties and that the importance of the study in the two specific counties should be strengthened.
He acknowledged that the objectives of the study were good, however, objective (a) could be improved by replacing the term 'analyse' with 'evaluate'.

On reviewing the methodology, Dr Mugalavi indicated that the sampling procedure should clearly set out what the study/target population was, how the sample of 120 was arrived at, whether there was scientific justification for the sample, if the number covered both counties and how the respondents were finally identified. In so far as the ethical considerations, he enquired as to whether the authors sought authorization from NACOSTI or IPSTC. He added that it was not clear whether the study had the blessings of the two county governments (Busia and Tana River). He stated that the data collection method should indicate how the FDGs were constituted and whether they comprised of only youth. He indicated that the section stated that an FGD comprised 20 people, which was on the higher side given that ordinarily, FGDs should comprise of between 8-12 respondents. He explained that the scientific method of analysis was absent in the data analysis from Focus Group Discussions. It should also be indicated what statistical method or software packages were used in data analysis.

Dr Mugalavi stated that the literature review should include the SGDs as well as vision 2030 in relation to the role of youth in disaster management. He also noted that the literature review was silent on the County Government Act 2012, CDF Act of 2016, EMCA 2015 and the Water Act 2016 among others that are quite relevant to the role of youth in disaster management.

With regards to youth involvement in decision-making process, Dr Mugalavi noted that it was not clear how the data that generated the results was collected and reflected under page 26. He also noted that there was no research question. He then mentioned that the tables should be numbered, while the figures should be appropriately based on the chapter and referred to before being presented. He stated that while evaluating the level of youth participation in disaster management in Busia County, the researchers should also have commented on every other preparedness aspect and emphasised on the key ones as well as use ranking to identify priority. He added that in the analysis of the level of youth participation in disaster management in Tana River County, some of the discussions such as poor infrastructure were not derived from the analysis. Dr Mugalavi emphasised the need to integrate all discussions in relevant sections where the results were presented. It was noted that the conclusion section was focused on the level of youth participation in disaster management, the second objective of the study and left out the first and third objectives of the study. He added that the recommendations should reflect the three conclusions. He then elaborated the highlighted references were not cited in the document and added that many citations did not appear in the list of references

Dr Mugalavi stated that the following aspects would help enrich the objectives:
First objective:

- An assessment of existing strategies at different levels of disaster cycle and at different administrative levels would have been documented, that is, at the ward level, sub-county level and county level targeting specific disasters.
- Documenting the package of disaster management strategies provided by different actors such as the County governments, National government authorities, international non-governmental agencies and local actors including individual communities, faith-based organizations and Kenya Red Cross, Islamic Aid, among others.

- Assessing and documenting the benefits from the decentralized funds such as CDF in activities related to disaster risk reduction involving the youth.
- Documenting how each actor and strategy ensures youth participation or how youth capacities are built in disaster management activities.
- Identifying the gaps that exist in the strategies offered and recommend how to fill the gaps.

Second objective:

- Documentation of what entails youth participation in the identified forms of disasters in each county.
- Documentation of how different actors have been engaging youth to ensure their participation in disaster management activities. For example, in Busia County there was WKCDD/FMP Western Kenya Community-Driven Development and Flood Mitigation, which was involved in capacity building of the youth in flood mitigation in Budalangi Sub-county Busia County. In Tana River County, Norwegian Church Aid through its Climate Change Adaptation Project, in 2014 developed a training manual and trained the youths on how they could be engaged in Climate Change adaptation and Mitigation activities as part of youth involvement in disaster management activities.
- Documentation of different disaster management activities at different administrative levels and showcase how the youth were involved.
- Identification of the strengths, weakness, opportunities and threats that resulted from such past youth engagement activities for future training programmes.

Third objective:

- Interrogating documented challenges and recommended solutions from past projects in the two counties by previous actors.
- Following up with the primary data from focus group discussions, in-depth key informant interviews and other sources of primary data.
- Application of policy and law in youth disaster management activities was not well captured. Currently in Kenya, Disaster management is a shared function between the National Government and County governments-Fourth Schedule of the Constitution of Kenya 2010. This is supported by the County Government Act 2012, CDF Act of 2016, EMCA 2015, Water Act 2016, among others. All these legislations emphasize on Community participation including youth participation in activities related to disaster management. As a result, Busia County Disaster Management Act, 2015 was enacted to ensure that disaster management in the county is carried out in a structured manner. World Vision International facilitated this. The study could benefit from the review of such legislation to ensure that the call for youth participation in disaster management activities is anchored in law. The study should also have assessed how these laws empower the youth in disaster management, that is, through ensuring youth leadership, capacity building, and allocation of resources among others. In practise, this is necessary for advocacy, lobbying and campaigning for youth involvement in disaster management activities.

9.3 Prof John Obiri

Prof Obiri begun by mentioning that globally, Early Warning Systems (EWS) are inevitable and are frequently used for cost-effective risk mitigation measures against natural hazards. EWS provide information on on-going/future events to reduce loss of life and damages. Unlike the traditional protection measures for example, dams and rock fall nets, among others, EWS are cheaper, can be quickly installed and have low environmental impact. Prof Obiri commented on the study - assessing effectiveness of disaster early warning system in IGAD member states: a comparative study of Kenya and Uganda. He stated that the paper was indeed relevant to the workshop theme of maritime safety as the region had seen cases of maritime disasters such as the MV Nyerere and MV Bukoba in Lake Victoria.

Prof Obiri acknowledged that the statement of the problem clearly pointed out that despite the increasing accessibility of disaster data, information, knowledge and expertise in Kenya and Uganda, there was need to examine the effectiveness of disaster EWS based on the UNISRD checklist of effective EWS. He stated that the research justification and research significance were confounded and needed more clarity. With regards to the hypothesis, he indicated that it was not ideal, and he opined that research questions could be better placed. He added that the study did not contain any statistical analysis to test hypothesis. He also noted that as it stands the phrased hypothesis was too loaded and had four variables masked in one hypothesis.

In reference to the development of EWS, Prof Obiri stated that the EWS historical outline was limited. He elaborated that the story of EWS started off with the Indian Ocean Tsunami in 2004 despite the fact that EWS had been part of life since time immemorial. He highlighted the fact that in many cultures worldwide, EWS was a key part of indigenous knowledge systems; for example, the Pokot and Turkana use livestock intestines to predict climate, birds and earthquakes, or honey guides. With regards to the components and process of disaster EWS, he stated that the risk knowledge needed to include the new ISO quality standard ISO 9001:2015.

Prof Obiri stated that where the theoretical and operational framework was used, the researchers would have opted for a conceptual framework. He observed that the theoretical framework had only one theory, Ajzen (1991), yet a theoretical framework should display several theories that show interaction and cohesion. He elaborated that although the operational framework showed the independent variables and their effect on the society, the dependent variables were not clear. He emphasised that a conceptual framework would have shown how the independent variables were linked to dependent variables as well as reflect how intervening variables like policy affected the would be interplay between EWS and DRR.

With regards to the methodology, Prof Obiri noted that the sampling drew from DRR operations and management institutions but no academic/universities, despite the fact that they have a big role in the pillar of risk knowledge generation. He also made an enquiry as to what informed the researchers' decision to interview 30 key informants and added that it would be prudent to include an index list as an appendix of the key informants interviewed.

Prof Obiri remarked that the number of focus group discussions that were held as well as the number of participants within each focus group should have been included in the methodology. He then mentioned that rather than having an analysis of the mean, median and mode, it would be better to use correlation analysis since it would compare the two countries. He indicated that the Chi-square tests needed to support views from attitude questions while the Likert scale of 1-5 should be clearly explained.

Prof Obiri highlighted the fact that the Kenya disaster EWS institutional structures were well articulated particularly the effects of delayed disaster policy. He noted that entities like District Disaster Management Committees had been replaced by County Disaster Departments headed by Directors and Resilience Officers. In regards to the four pillars of EWS effectiveness, Prof Obiri stated that the overall rating on effectiveness across the four pillars needed a review in calculation of the percentages; for example, in part 1, the rating was not at 63% as was indicated but averaged 31.5%. He noted that disaster risk management knowledge indicated (63%) based on effective EWS rate needed recalculated. He noted that one cannot add across two different entities such as two countries. The two separate countries each attributed to 30% and 33% effectiveness, therefore when adding up the two countries, their effectiveness does not increase to 63% but rather averaged at 31.5%, that is 63/2.

Prof Obiri noted that even though Uganda had a disaster policy much earlier than Kenya, the EWS effectiveness in the two countries were generally the same. He added that it would be interesting to see EWS effects in Kenya after the Disaster Act had been implemented and taken root in the Kenyan society.
Prof Obiri outlined the following as part of the recommendations:

- Developing advocacy for/with policy makers to fast-track disaster management policy in Kenya.
- Developing disaster and community specific policy actions on resilience building for National/County governments.
- Mainstreaming EWS from primary to university level and establishment of a DRM database.

Programs/Partnership:

- Upscaling of resilience building at the community level to equip community's ability to respond to disasters (CBDRR).
- IPSTC should upscale simulation for EWS for both community and EWS practitioners.
- IPSTC should establish partnership with EWS institutions at the regional, national and community levels.

10. Summary of Plenary Session

After the presentation of the research papers by the IPSTC researchers and the remarks by the discussants, Prof Gatara invited the participants to give their comments. The plenary discussions centred on questioning not only the research but its relevance, link to the overarching theme and the gaps that needed to be filled. Some of the issues raised included:

- Participants were informed that Kenya had an approved working National Disaster Management Policy document. An observation was made on the Sendai Framework that proposes a paradigm shift from disaster management to disaster risk management. It was stated that this had been captured in a government-led disaster risk management bill 2018 that was under development.
- It was noted that the institutional framework for disaster risk management was not essentially unknown in Mombasa and Kwale counties and indeed, the fact was that the communities had different priorities. It was stated that there had been efforts to sensitize the community on the need for disaster preparedness. However, in the absence of incentives, the uptake was considerably low. With regards to coordination between county and national government, it was noted that this actually existed and there was good infrastructure for coordination. It was also stated that there was extensive capacity building and funding for it was available. However, it had been reactive as opposed to being proactive.

It was mentioned that the counties could not manage Bills on earthquakes in disaster management as this was essentially a function of the national government.

- A suggestion was raised for the counties of Mombasa and Kwale to come up with their own radio stations to sensitize the community on disaster preparedness. It was pointed out that the counties funding mechanism was unquestionably efficient. It was recommend that the study should emphasis the need for proper as opposed to ad hoc civic education because it was important for people to understand the impact of knowing the effects of disaster and the need for preparedness.
- It was observed that the situation analysis was not holistic. For example, what had the county government done so far? The initiative of getting trained marines in Kwale should be interrogated. Additionally, the issue of returnees should be brought out strongly and properly documented in the research. Notably, these issues were well captured in the research document and the presentation was simply a snapshot of the findings.
- With regards to the study on Maritime Disaster Risk Reduction Preparedness along Kenya's Coastline, it was stated that the research was land based yet the maritime domain was quite extensive and as such should also look into more than just the coast line, it should include oil spills, fishing, mining, among others.
- It was stated that the study on Maritime Disaster Risk Reduction Preparedness should give a typology of the disasters being addressed in the study either through a matrix of the sample space being used or having an index at the beginning of the document to encompass the maritime domain as a whole.
- On the same study, it was noted that the responses being referred to should be graduated to reflect how different institutions have primacy in regard to different kinds of disasters.
- With regard to the study on Assessing Effectiveness of Disaster Early Warning System in IGAD Member States: A Comparative Study of Kenya and Uganda, it was noted that the topic steered towards IGAD yet it was only focused on Kenya and Uganda and excludes other member IGAD member states. It was also stated that Kenya had other early warning institutions such as WARMA on floods and KENGEN and NDMA on drought.
- It was mentioned that Mombasa established Community Disaster Management Committee's (CDMC's) in 30 stations within the county. In each sub location 20 community volunteers were trained with the involvement of the Provincial Administration in conjunction with the Red Cross. Based on this, it was emphasized that the investments made in the communities was effective and as such should be included in policy to enhance such structures.
- An enquiry was raised with regards to youth participation in DRM on whether the youth who are trained actually do the work and whether they were aware of what they are supposed to do. It was noted that disaster management should be included in the youth policy currently under review. On the study on early warning systems, it was pointed out that that when referring to early warning, early response, including its effectiveness, should be looked into.
- It was acknowledged that there was need to emphasis the importance of educating the members of the county assembly on disaster risk management.
- As for the study on Youth Participation in Disaster risk Management and Assessing Early Warning Systems, it was stated that both studies should look into how start-ups with innovations can be used or have been used by the youth to mitigate their vulnerabilities.
- Lastly, it was noted that all the studies should factor in the issues of SDGs and how they should be applied with regards to Disaster Risk Management.

11. Syndicate Presentations

Three syndicates were formed and asked to discuss possible areas for institutional collaboration.
Suggestions from Syndicate A:

- Capacity Building Programs For Disaster Management.
- Research and Training.
- Development of a Rescue Trail.
- Oil Spill Management and other Marine Accidents.
- Information Dissemination on Disaster Incidents.

Suggestions from Syndicate B:

- Youth Peace and Security.
- Trainings on Disaster Risk Management.
- Sensitisation and Dissemination of Information on Disaster Risk Management.
- Human Resource Management.
- Research on Climate Change.
- Inclusion of youth in decision making.
- Introduction of youth to the Blue Economy.

Suggestions from Syndicate C:

- Traditional Knowledge as a Tool for Early Warning Systems.
- The Maritime Domain.
- Coordination amongst Stakeholders.
- Appropriate Curriculum for the Dissemination of Information through Mobile Technology.
- Simulation and Developing Standard Operation Practices in Early Warning Systems.

12. Symposium Wrap-Up

Prof. Gatara wrapped up the symposium by stating that the day was intellectually productive and the exchange of ideas was very fruitful. He added that the IPSTC appreciated the attendance of all the participants.
He publicized the Centre's Peace Journal titled The Africa Amani Journal, and urged participants to submit articles on any area of peace and security. He also stated that the Centre was also planning to begin a graduate program in conjunction with its partners. Lastly, Prof. Gatara took the opportunity to appreciate the researchers, discussants and participants for their contribution to a successful symposium.

13. Closing Remarks

Col F Kihanya gave the closing remarks on behalf of the Director, Brigadier Nderitu.
Col Kihanya started by congratulating everybody for all the work they had done with special thanks to the participants for putting serious thought and effort into contributing and giving insight into the presentations of the day. He stated that the gap in so far as mitigating disaster in the country was clearly evident. In view of this, he stated that it was prudent for stakeholders, policy makers, practitioners and the academia to give their views and improve the safety of the community. He recognised the role the presenters and the discussants played during the symposium. He added that their expertise would enable the Centre to consolidate and better communicate the ideas emanating from the symposium. He hoped that participants benefited from the days interactions and established personal networks. He concluded by inviting everybody present to access the Centre's publications on peace and security and point out areas that needed improvement. He also appreciated the professionalism of all participants, their commitment and contributions to the important field of disaster management and response.
Col Kihanya officially closed the symposium and invited guests for a cocktail at the Peace Banda.

14. Appendix

Attendance list

Government of Japan

S/ No.	Rank/ Title	Names	Sex	Organization	Nationality	Telephone	Email address
1.	Ms	Diana Bochaberi	F	ICGLR	Kenyan	0724437377	dbochaberi@gmail.com
2.	Col	Nyatigo Marwanea	F	Kenya Army	Kenyan	0728895073	nyatigomari@gmail.co
3.		Boniface Orlando	M	NDMU	Kenyan	071361063	boniorlando@gmail.com
4.	Ds	Patrick Moluki	M	UON	Kenyan	0722626286	patrick.moluki@uonbi.ac.ke
5.	Dr	Margaret N. Githae	F	CUEA	Kenyan	0723037608	margaretgithae@gmail.com
6.	Ms	Cindy Koyier	F	Rapporteur	Kenyan	0724706857	cindykoyier@gmail.com
7.	Lt Col	Omar A Mohamed	M	DSC	Kenyan	0723627771	omarrs@gmail.com
8.	Lt Col	Robert T Birech	M	KN	Kenyan	0719679479	btirop@yahoo.com
9.	Lt Col	Edwin M Teko	M	KA	Kenyan	0714721515	
10.	Col	S K Sane	M	KAF	Kenyan	0722429485	stevesane@gmail.com
11.	Lt Col	E A Omollo	F	IPSTC	Kenyan	0722321628	eomollo@ipstc.org
12.	AIG	Francis W Mwangi	M	NDMU	Kenyan	0721269770	mwangifrancis@gmail.com
13.	Mr	Amos Ochiri Anyieni	M	NDMU	Kenyan	0711615564	amozaya@gmail.com
14.		Evelyn Koech	F	UNDP	Kenyan	0725225271	evelyn.koech@undp.org
15.	Dr	Zeinabu Khalif	F	UNDP	Kenyan	0717180100	zeinabukhalif@undp.org
16.	Mr	Edward Muriuki	M	KMD	Kenyan	0722955790	edmuriuki@gmail.com
17.	WOI	James Geyaye	M	HPSS	Kenyan	0722626331	gelategekonde@gmail.com
18.	Dr	Abdulmalik Gichuki	M	Consultant	Kenyan	0713043427	abdulmalikge@ ustawiconsultant.com
19.		Michael Gitau	M	NDMU	Kenyan	0729444059	gitau.ems@gmail.com
20.		Chepkorir Abigael	M	NDMU	Kenyan	0710532237	ronoabigael@gmail.com
21.		Esther Jabi	F	Visionary	Kenyan	0712852712	jabinjuguna@gmail.com
22.	Col	Ndwimana Donatien	M	IPSTC	Rwandan	0707089800	ndwimana@yahoo.com
23.	Dr	Eunice Njambi	F	IPSTC	Kenyan	0721258968	eunice.njambi@ipstc.org
24.	Comm.	Dennis Ndalo	M	St John	Kenyan	0707089800	dndalo@yahoo.com
25.		Seth Odongo	M	Mombasa County Government	Kenyan	0721258968	sethodongo@yahoo.com
26.		Weldon Korir	M	KPA	Kenyan	0722346714	wkovivakpa.co.ke
27.		Otieno Ezekiel Okwach	M	Busia County Government	Kenyan	0722359354	Otienoezekiel15@gmail.com
28.		Otieno Bernard Okoth	M	KMA	Kenyan	0752856658	botienokam.go.ke
29.		John Obiri	M	Musinde Muliro University	Kenyan	0721338504	johnobiri@mmust.ac.ke
30.		Irene Omoita	F	KRC-Busia	Kenyan	0700087764	irynomorti@gmail.com
31.		Mercy Emgong Amai	F	NEMA	Kenyan	0726994243	emomessy@gmail.com
32.	Dr	Chemla Opiyo	F	NCTC	Kenyan	0724537242	Chemlaopiyo.go.ke

33.		Rolyne Kendi Mworia	F	KPA	Kenyan	0723364903	rolyne91@gmail.com
34.		Emmaculate Mwende	F	IPSTC	Kenyan	0705140922	emmaculate.mwende@ipstc.org
35.		Wilkister J Segon	F	IPSTC	Kenyan	0728562277	wilkister.segon@ipstc.org
36.		Musyoni Monica	F	IPSTC	Kenyan	0725859332	monica.musyoni@ipstc.org
37.		Margaret Cheptile	F	IPSTC	Kenyan	0720610880	margaret.cheptile@ipstc.org
38.		Joseph Thoya	M	Kwale County Government	Kenyan	0712856802	thoya.joseph@gmail.com@ipstc.org
39.		Abdulahi Halake	M	NDMA	Kenyan	0725342627	abdulahi.halake@ndma.
40.		Brian Karaahe	M	RED CROSS	Ugandan	0782926857	bkaraahe@redcross.com
42.		Edward Mugalavai	M	MMUST	Kenyan	0720253985	emugalavai@mmust.ac.ke
44.		Eric Aduda	M	KWS	Kenyan	0724275141	eaduda@kws.go.ke
46.		Michael Muchiri	M	JKUAT Mombasa	Kenyan	0733798914	michaelmuchiri360@gmail.com
39.		Francis Matheka	M	UNDP	Kenyan	0713790138	francis.matheka@undp.org
41.	Maj	Wamalwa Stephen	M	IPSTC	Kenyan	0721740735	stephen.wamalwa@ipstc.org
43.	Dr	Muthoni Mainah	F	KU	Kenyan	0722608074	dr.muthonimainah@gmail.com
45.	Maj	S D Mwachinalo	M	IPSTC	Kenyan	0722433998	saidimwachinalo@ipstc.org
47	Maj	Laurne Bauer	F	IPSTC	Canadian	0748599921	laurne.bauer@ipstc.org
49		Wekesa Job	M	IPSTC	Kenyan	0725987496	job.wekesa@ipstc.org
51		Evans Andambi	M	IPSTC	Kenyan	0715612265	evans.andambi@ipstc.org
53		Joseph Mbugua	M	IPSTC	Kenyan	0710834806	joseph.mbugua@ipstc.org
55	Prof	Timothy Gatara	M	IPSTC	Kenyan	0712765861	timothygatara@gmail.com
57		Tabitha Wacu	F	IPSTC	Kenyan	0704862696	psrdsecretary@ipstc.org
58	Maj	Regina Musau	F	IPSTC	Kenyan		regina musau@ipstc.org
59	Maj	Nina Omanyo	F	IPSTC	Kenyan	0723469420	nina.omoyo@ipstc.org

P.O. BOX 24232 – OO502
Westwood Park Road Karen, Nairobi, Kenya
TELEPHONE: +254 791574336 / 786585167
WEBSITE: www.ipstc.org

UNITED NATIONS DEVELOPMENT PROGRAMME

This Report is supported by the Government of Japan through UNDP

JAPANGOV
THE GOVERNMENT OF JAPAN