POST-DISASTER RISK FINANCING INSTRUMENTS AS A STRATEGIC FINANCING OPTION FOR DISASTER RISK REDUCTION IN THE KENYAN NATIONAL DISASTER PLATFORM

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ABSTRACT

Mobilization of financial resources for disaster risk reduction represent value for money because for every dollar invested in disaster risk reduction, between four and seven dollars are saved in the long run. The reactive emergency aid business model commonly applied is not helping much in disaster risk reduction because it suffers from irregular flow of funds making it unpredictable and complex in its arrangement for acquisition as well as eventual disbursement. Disaster risk financing instruments are increasingly at the centre of this nuxes since there exists an inseparable relationship between disaster risk financing instruments on one hand and disaster risk reduction activities on the other hand. Post-disaster risk financing instruments are budgetary reallocations, domestic credit, external credit, donor assistance and tax increase. Disasters pose daunting barriers to development in developing countries because they are inadequately prepared due to weaknesses of their economies, high level of indebtedness and rigid budgetary processes which do not allow them to reallocate budget post-disaster. This article analyzes the cause effect relationship between post-disaster risk financing instruments and risk reduction in the Kenya national platform. The primary data used in the analysis is based principally on a survey of 60 respondents interviewed in 2016 in the public and private organizations. Secondary data attained from archival records, UNDP and Development Initiatives documentation centres were used to cross-validate primary data. Correlational research design was adopted while statistical analysis employed was Pearson’s co-efficient of correlation and multiple regression analysis. The results show that there is a positive and significant relationship between post-disaster risk financing instruments and disaster risk reduction in Kenyan national disaster platform (r=0.286, p=0.000<0.01). The findings point to the need for the establishment of a disaster risk revolving fund in Kenya which is structured along the post-disaster risk financing sources.

Introduction

This article investigates post-disaster risk financing in bid to assess its effect on disaster risk reduction in the Kenyan national platform. Disaster risk financing is a unique endeavor involving strengthening institutions, building resilience and sustainable recovery (Association of Southeast Asian Nations, 2011). It is a financial protection strategy model which mobilizes the resources to be invested in disaster risk reduction, given the ever increasing number, scale and severity of disasters. Resource mobilization and allocation are essential elements in disaster risk reduction. The government, development partners and other stakeholders avail human, material and
financial resources to prevent, prepare, manage and mitigate the effect of disasters (Government of Kenya, 2002). Disaster risk financing is increasingly at the nexus of disaster risk reduction partial as a causal factor in disaster risk reduction (DRR). Globally, DRR is being given a high priority, for example, the World Bank (2005) concluded on the Hyogo declaration which contends that “states have the primary responsibility to protect the people and their property on their territory from hazards and to give high priority to disaster risk reduction in national policy, consistent with their capacities and resources available to them”.

In view of the foregoing, the reactive emergency aid business model may not help much hence the need to adopt a proactive disaster risk financing option; examining financing sources and priority areas in the utilization of funds for disaster risk reduction. Ban Ki-Moon (2010) explains that reducing disaster risk and increasing resilience to natural hazards through effective utilization of funds in different development sectors can have multiplier effects and accelerate achievement of the Sustainable Development Goals (SDGs). Wise investment can spur disaster risk reduction, protecting largely the population and the national coffers from losses (Wahlstrom, and Anders, 2010).

Cummins and Mahul (2009) argue that governments generally have access to various sources of financing following a disaster. These sources can be categorized as Pre-disaster risk and post-disaster risk financing instruments. Pre-disaster risk financing instruments require proactive advance planning and include reserve and calamity funds, budget contingencies, contingent debt facility and risk transfer mechanisms. Ghesquiere and Mahul (2010) explain that risk transfer instruments are instruments through which risk is ceded to a third party, such as traditional insurance and reinsurance, parametric insurance where insurance payments are triggered by pre-defined parameters such as the wind-speed of a hurricane. Also included in the risk transfer mechanisms are the Alternate Risk Transfer (ART) instruments such as Catastrophe (Cat) bonds. Post-disaster risk instruments are sources that do not require advance planning. These instruments include budget reallocation, domestic credit, external credit, tax increase and donor assistance.

Twigg (2004) emphasizes that the design of an efficient disaster risk financing strategy is essential for governments interested in strengthening their response capacity which will generally have to combine a number of complementary financial instruments and policies. Experience suggests that a government facing a natural catastrophe will not require funding for its entire recovery and construction program immediately following the event. While immediate resources will be necessary to support relief operations, the bulk of needed funds will only be required several months later, when the actual construction program starts.

In Kenya, the national platform on disaster management as outlined in the proposed National
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Policy on Disaster Management (NPDM) – 2002 consist of the National Aids Control Council, National Operations Centre, Arid Land Resource Management Project and the Department of Relief and Rehabilitation. There are also specialized units which have roles on search, rescue, anti-terrorism, evacuation, planning and management, enforcement of crowd control, conflict resolution and fire fighting. These units include the Police, the Department of Defense, National Youth Service, County government fire brigade, hospitals, the directorate of labour, occupational health and safety Services and the Kenya Wildlife Services. Further the policy recognizes the ministries responsible for agriculture and rural development, natural resources and environment, labour and human resource development, trade and industry, health, roads and public works, transport and communication, information and tourism, energy, finance and planning, land and settlement, education, science and technology are involved in disaster management. In addition, International Authority for Development (IGAD), UN Agencies and other bilateral partners and international Non-Governmental Organizations (NGOs) play significant role in disaster management in Kenya.

In the Kenyan national platform, the government agencies, ministries, departments, communities and civil society have been involved in the efforts to mitigate, enhance preparedness and advocacy to protect livelihoods and the assets of communities and individuals from the impact of hazards. The study adopted the following indicator of disaster risk reaction; state of preparedness, establishment of early warning systems, coping capacity level, state of capacity development, mitigation measures adopted and resilient levels.

Preparedness action is carried out within the context of disaster risk reduction and its aimed at building capacities needed to efficiently manage all types of emergencies and achieve orderly transitions from response through to sustained recovery. Concerns (2005) noted that preparedness plans often include capacity buildings and are usually knowledge based involving early warning systems that monitors and predict the occurrence of hazards, the contingency plans for effective response and recovery which can be implemented by the community, implementing partners, the government and others (CRED, 2009).

Mitigation is the lessening or limitation of the adverse impact, of hazards and related disasters. The scale and severity of the adverse impact of hazards often cannot be prevented fully but can be substantially lessened by various mitigation strategies and actions. DFID (2005) stated that mitigation measures are divided into infrastructural and non-infrastructural measures that reduce the frequency, intensity, scale and impact of hazards.

Early warning systems (EWs) is the set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the
possibility of harm or loss. Concern (2005) explains that there are three elements found within any EWS: It must be able to forecast when a hazard is going to occur and predict its scale and intensity. The hazards must be identified through risk and vulnerability assessments and to retain credibility, the forecasts must achieve a high degree of accuracy. Another element is that the forecast must be communicated within and to, communities that are at risk from hazards impact. The third element is that there must be a sensible response to the warning by communities and other players including the local authorities, central government and international organizations.

Coping capacity is ability of people, organizations and systems using available skills and resources to face and manage adverse conditions, emergencies or disasters. Appropriate mobilization of financial resources is an integral part of coping capacity more especially the pre-disaster risk financing instruments which are sourced prior to adverse conditions, emergencies or disasters (UNISDR, 2009). The capacity to cope requires continuing awareness, resources such as financial resources, and good management, both in normal times as well as during crisis or adverse conditions. Coping capacity may contribute to the reduction of disaster risks (GoK, 2010).

Capacity development is the process by which people, organizations and society systematically stimulate and develop their capacities over time to achieve social and economic goals including through improvement of knowledge, skills, systems and institutions. Capacity development is a concept that extends the term of capacity building to encompass all aspects of creating and sustaining capacity growth over time (Mitamoto, 2008). It involves learning and various types of training but also continues efforts to develop institutions, financial resources, technology, systems and the wider social and cultural enabling environment.

Resilience means the ability to “resile from” or “spring back from” a shock. The resilience of community in respect to potential hazard events is determined by the degree to which the community has the necessary resources and is capable of organizing itself both prior to and during times of need (UNISDR, 2008). Resilience also refer to the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

In order to have indepth understanding of the post disaster risk financing instruments we now examine each of the post disaster risk financing instruments in turn.

**Post-Disaster Risk Financing Instruments**

Ghesquiere and Mahul (2010) describes the post disaster risk financing instruments as sources of finance which require some time to disburse, they are not immediately available for disbursement in an event of a disaster. These sources of finance include donor assistance, budget reallocation, domestic credit, external credit and tax increase.
i) Donor Assistance

United Nations (UN) has been playing a key role in providing funds or assistance towards disaster risk reduction across the globe with more focus in the developing economies. In Kenya, we have the United Nation Disaster Management and Training (UNDMT) as the umbrella organization. Others are United Nations Development Programmes (UNDP), World Food Programmes (WFP), Food and Agricultural Organization (FAO) United Nations Children’s Education Fund (UNICEF), United Nations High commission for Refugees (UNHCR) and World Health Organization (WHO). The United Nations Development Assistance Framework (UNDAF) meets the funding needs for Kenya and millennium development goals (MDGs) for peace, security and development. These funding needs are met upon the umbrella organization – UNDMT compiles, evaluate and keep up to date information about disaster risks to Kenya.

The UNDP is missioned to help countries in their effort to achieve sustainable human development focusing on poverty, employment creation, sustainable livelihoods, empowerment of woman, protection regeneration of environment and dealing with HIV and AIDS. The WFP is a UN agency mandated to combat hunger and in emergency situation provides food to save lives. While FAO provides support for better water then yielding crop techniques, crop and livelihood stock diversification creates use of drought resistance crop varieties and improved control of pests affecting crops and livestock (UN 2003). UNICEF advocates and works for protection of children’s rights, meeting the young basic needs and helping them to meet their full potentials in education and health. WHO is a UN agency with responsibilities for health in respect to bird flue, Ebola, Stars, HIV and Aids as well as other pandemic (UN, 2004).

Ghesquiere and Mahul (2007) argue that grant financing from donors will always be the cheapest source of financing post disaster. Many donors have well established humanitarian programs and can be quick to respond, particularly to support relief operations. Ghesquiere and Mahul (2010) conform that donor financing is plagued with limitations: it is often driven by media coverage, making donor assistance difficult to predict. For example, the catastrophic floods in Guyana in 2005 occurred just a few weeks after the major earthquake in Pakistan in October, 2005 and had very little media coverage resulting in limited financial assistance. Another limitation of donor funding is the complexity of arranging for their acquisition and eventual disbursement hence they may take some time before they are received. Also donor assistance are generally earmarked to support pre-identified expenditure, reducing flexibility in their use.

Major humanitarian crises in the past decade have prompted unprecedented amounts of private donations; the tsunami that caused widespread devastation across the Indian ocean in December 2004 saw US $ 3.9 billion raised in private aid;
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the response to the January 2010 earthquake in Haiti generated at least US $ 1.2 billion in contribution from the general public and US $ 450 million was channeled in response to the 2010 floods in Pakistan.

In the past decade, governments worldwide have contributed at least US $ 97.8 billion to assisting victims of humanitarian crises. More than half of this money 57% has been spent in the past five years and 2010 saw the highest level of humanitarian funding ever. The international humanitarian response accounting for government as well as private giving to emergencies amounted to US$ 73.9 billion for the period 2006 through to 2010. Since 2000, government donors have spent at least US$ 104 million on international humanitarian response. Africa has taken the largest share of funding, followed by Asia and Middle East. Sudan has been the largest receipt of international response from donor governments over the past decade with US $ 8.9 billion (Figure 1).

Figure 1: Aggregate Funding to Top 20 Recipient Countries of Humanitarian Aid Channeled through Delivery Agencies, 2006-2010

Source: Development Initiative (2010)
ii) Budget Reallocation

Budget reallocation refers to using of money from other votes on the mitigation of disasters. For examples, moneys which are meant for the maintenance of government vehicles at the national government, a portion of it can be invested in disaster related activities in an event of a calamity.

Budget virement is acceptable in the financial reporting if due procedure is followed because it is prone to abuse. The concerned entity can examine those expenditure allocations which may be having substantial funds and are not immediately required to be expensed. At the relief phase of the disaster cycle the budget reallocation is handy in the provision of shelter, food and medical interventions.

iii) Domestic Credit

Credit facilities are meant to shore up capital for various purpose; short term needs as well as productivity purposes. When a government wants to bridge the budget deficit domestic credit has always been used through issue of the treasury bills. These are government securities which many investors highly prefer because of their low risks and sure return.

Besides, an entity can borrow money from both banks and non bank financial institutions within a country to meet certain expenditure requirements such as remuneration of public service when there is industrial dispute and when a disaster has occurred. Although this form of finance is discredited because of the crowding off effect. It means that the government takes money which would otherwise be used by the investors hence leading to minimal funds available for the private investors. This may even push the cost of finance-interest rates of the commercial banks may go up.

iv) External Credit

To finance reconstruction of public infrastructure and housing, the Government of Philippine (GoP) has been utilizing World Bank and African Development Bank (ADB) emergency reconstruction loans, as well as reallocations from ongoing loans in the lending portfolio (World Bank, 2000). Although this type of support is processed more quickly than standard lending operations, the funds do disburse slowly when compared to pre-disaster mechanisms. Mahul and Stuley (2010) argue that these lending instruments are not appropriate for meeting the immediate liquidity needs in the aftermath of a disaster, which may have far reaching negative social and economic implications if they are not satisfied. Ghesquiere et al (2010) noted that external credit may be in the form of emergency loans and bond issue. The disbursement period can take between three to six months and amount of fund available may be large enough to undertake recovery and reconstruction phases of post disaster funding needs.

A government may issue an infrastructure bond for reconstructure of capital projects like dams,
bridges, houses and roads that might have been destroyed by natural hazards like floods. This source of financing may be influenced by the capital market condition of a country. Although it may provide large amount of funds to be invested in the disaster mitigation measures.

v) Tax Increase

Robinson and Cutt (1968) observed that taxation is the primary mode of financing government expenditure in different countries. Adequacy and flexibility are among other principles of taxation. Tratman (1983) argues that a tax system must be capable of providing the flow of funds that a government deems appropriate in any given period. He further notes that a tax system should be flexible in that a tax system should be constituted in a way that the government by discretionary actions can readily increase or decrease the flow of tax funds in response to charging circumstances, which can stem either from considerations of expenditure requirements or of economic policy.

The circumstances that may necessitate tax increase are services which are demanded by the public such as health care, provision of social amenities or simple part as capital expenditure such as structural and non-structural measures which mitigates the vulnerable elements from the impact of the disasters. Robinson at el (1968) explain that some taxes such as those of property and on personal income are more flexible than others in that their rates can be altered so as to accommodate small as well as large charges in revenue requirements. The cost of financing and absorbing the impacts of disasters and climate changes is huge and rapidly increasing and has become but also will continue to be a heavy burden on the governments. Asia Pacific Adaptation Network (APAN, 2013) noted that natural disasters and climate change impacts have caused huge financial losses to all sectors, but it is the public sector that offers and absorbs the largest portion of these losses. Some of these losses are bigger than what governments can afford, wiping away years of development gains and putting pressure on meager public funds. This may prompt governments to increase taxes.

Coombas and Fenleins (2002) posit that government approaches to financing of capital expenditure are financing from reserves, by borrowing by leasing and from revenue. The revenue resources involve using revenue from current taxation, fees and charges, asset sale and privatization proceeds, Swiss Re (2012) estimates that natural disasters caused US $ 126 billion in economic losses in 2011 and a big chunk of these losses are shouldered by the public sector.

The Thailand floods of 2011 for example, resulted in US $ 46.5 billion of economic losses and required the Thai government to spend almost 5 percent of its annual revenue for response and recovery efforts. ASEAN countries suffer annual damage of over US $ 4.4 billion each year because of disasters- an amount equivalent to more than 0.2 percent of the region’s total GDP (World Bank, 2012)
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The Conceptual Framework and Hypothesis

![Conceptual Framework Diagram]

This article is anchored in the conceptual framework (Figure 1 below) depicting the relationship between post disaster risk financing instruments and disaster risk reduction in the Kenyan national disaster platform. The article identifies budgetary reallocation, domestic and external credits, donor assistance as well as tax increase as the post-disaster risk financing instruments. Besides, disaster risk reduction is measured in terms of state of preparedness, coping capacity, mitigation measures, level of resilience, established early warning systems as well as capacity development measures. While the null hypothesis formulated and tested was: \( H_0 \) there is no significant relationship between post disaster risk financing instruments and risk reduction in the Kenyan national disaster platform.

Methodology

Study Area

The study was conducted in Kenya. The Republic of Kenya is located on the Eastern part of the continent of Africa and forms an important part of East Africa. The country shares a common boundary with Ethiopia and Sudan to the North, Uganda to the West and to the southwest it is bordered by the Indian Ocean. The country is located approximately between latitudes 4°21’N and 4°28’S and between longitudes 34° and 42°E. Practical considerations dictated the choice of the study area. First, lack of comparable studies and the almost total absence of concrete information regarding disaster risk financing strategies and risk reduction. Perhaps this may explain why the reactive emergency aid business model commonly witnessed whenever a disaster occurs has exposed the country to the impact of the disaster. Secondly, Kenya has also experienced ever increasing number, scale and severity of disasters.
with the most recent being the terrorist killing of 148 students at Garissa University College. Thirdly, a number of organizations in Kenya such as the NACC have received significant funding with very little if any to show for that. For example, in the 2001/2002 fiscal year, the body received US $43 billion almost a quarter of the country’s Ministry of Health annual budget for 2001/2002 financial year from donors (Ogot 2004). Fourthly, the amount of loss through disasters is enormous more especially in the Third World Countries, Kenya included. For example, economies across the world have lost more than Kshs. 20.05 billion as a result of collapsed buildings where Kenya accounts for Kshs. 1.4 billion (Munich, 2002 and CRED, 2009). The interaction of financing strategies of the national platform organizations in disaster risk reduction warranted the need to the seriously investiga

**Data Collection and Analysis**

The data for this article were collected between July 2015 and November 2016. The primary data used in the analysis is based on a survey of 60 respondents based in both the private and public organizations engaged directly and indirectly in disaster risk reduction activities in the Kenyan national platform. The data was collected through a self-administered semi-structure questionnaire, while interviews were conducted where only one respondent was interviewed from each organization.

The secondary sources on the other hand, yielded information pertaining to (i) current hazard events or conditions; (ii) disaster preparedness, (iii) disaster risk reduction forms and preparedness planning; and (iv) post-disaster risk financing instruments/strategies. Most of this information was obtained from archival records for example annual accounts strategic plans and disaster mapping reviews. Other sources of secondary data included: publications of funds mobilization strategies by both the governments and private organizations.

The data was edited to ensure completeness and consistency, classified and arranged in contingency tables and coded for efficient analysis. The data was then analyzed using both descriptive and inferential statistics. Descriptive statistics was used to deduce any patterns and averages (mean) and dispersions in the data variables. Inferential statistics were also used to determine the relationship between the research variables. Karl Pearson’s coefficient of correlation or the product moment correlation between the pre-disaster as well as post disaster risk financing instruments and disaster risk reduction, the same tools were used.

**Results and Discussion**

**Post Disaster Risk Financing Instruments in the Kenyan National Disaster Platform**

The study findings revealed that in the Kenyan national platform, the post disaster risk financing instruments used are donor assistance, budgetary reallocation, domestic and external credits as well as tax increase as detailed in Table 1.
Table 1: Ranking of sources of Finances used by the organizations in disaster risk reduction in the Kenyan national disaster platform

<table>
<thead>
<tr>
<th>Source of Finances</th>
<th>Highest</th>
<th>higher</th>
<th>high</th>
<th>Low</th>
<th>Least</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reserve funds</td>
<td>27.9%</td>
<td>46.3%</td>
<td>15.4%</td>
<td>10.3%</td>
<td>0%</td>
</tr>
<tr>
<td>Contingent debt</td>
<td>27.8%</td>
<td>31.5%</td>
<td>27.8%</td>
<td>13.0%</td>
<td>0%</td>
</tr>
<tr>
<td>Budget contingencies</td>
<td>82.8%</td>
<td>3.4%</td>
<td>6.9%</td>
<td>6.9%</td>
<td>0%</td>
</tr>
<tr>
<td>Insurance schemes</td>
<td>26.4%</td>
<td>43.2%</td>
<td>22.6%</td>
<td>7.3%</td>
<td>10.6%</td>
</tr>
<tr>
<td>Donor assistance</td>
<td>25.9%</td>
<td>48.9%</td>
<td>12.9%</td>
<td>0.8%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Budget reallocation</td>
<td>12.5%</td>
<td>25.9%</td>
<td>42.0%</td>
<td>3.6%</td>
<td>16.1%</td>
</tr>
<tr>
<td>Domestic credit</td>
<td>12.2%</td>
<td>15.9%</td>
<td>39.5%</td>
<td>19.5%</td>
<td>12.9%</td>
</tr>
<tr>
<td>External credit</td>
<td>7.7%</td>
<td>3.8%</td>
<td>9.2%</td>
<td>63.8%</td>
<td>25.4%</td>
</tr>
<tr>
<td>Tax increase</td>
<td>0%</td>
<td>1.2%</td>
<td>6.8%</td>
<td>29.8%</td>
<td>62.2%</td>
</tr>
</tbody>
</table>

Source: Field Survey Data (2016)

Table 2: Respondent opinion on donor assistance as a post disaster risk financing instrument

<table>
<thead>
<tr>
<th>Description</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>%</td>
<td>Count</td>
<td>%</td>
<td>Count</td>
</tr>
<tr>
<td>Without donor assistance most of DRR activities would be</td>
<td>40 (67%)</td>
<td></td>
<td>10 (17%)</td>
<td></td>
<td>10 (17%)</td>
</tr>
<tr>
<td>adversely affected</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donor assistance responses are often in good time whenever a</td>
<td>20 (33%)</td>
<td></td>
<td>20 (33%)</td>
<td></td>
<td>20 (33%)</td>
</tr>
<tr>
<td>need arises</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Survey Data (2016)

According to the findings, donor assistance is the most commonly used post disaster risk financing instrument in disaster risk reduction at 48.9%. The findings are in agreement with the results of (Mahul, 2009) which revealed that 50% of the funds used for immediate response in an event of a disaster comes from donor assistant in the Third World Countries. The respondent also observed that tax increase is the list used at 62.2%.

**Donor Assistance as a Post Disaster Risk Financing Instrument as applied in the Kenyan National Disaster Platform**

Table 2 below summaries the opinion of the respondents in respect to donor assistance as an aspect of disaster risk financing instrument among the Kenyan national platform players.

When the opinion of the respondents were sought on whether DRR activities would be adversely affected without donor assistance 67.0% of the study respondents strongly agreed that DRR activities would be adversely affected without donor assistance. The findings are in agreement with (Crandall, 2008) which revealed that 40% of funds used in the rehabilitation of drug victims in Colombia come from donor funds. Although 17% strongly disagreed, while another 17.0% were not
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sure, as table 2 reveals. This shows that donor assistance is significant in financing DRR activities in Kenya. Also in terms of the time the donor assistance comes the respondents were of rather a balance opinion of 33% for those strongly agreeing, 33% for those agreeing and 33% disagreeing that donor assistance responses are often in good time whenever a need arises. The findings are in agreement with the result of (Nata, 2012) which revealed that in most cases the donor assistance do not come in good time.

**Budget Reallocation among by the Kenyan National Disaster Platform Players**

Budget reallocation is one of the post disaster risk financing instruments commonly used by state agencies and other organization in an event of a disaster. When the respondents’ opinion was sought on this financing instrument, 80% of the respondents noted that it is used by their organizations. It involves adjustments made on the operational budget by removing and adding funds to certain vote heads to help in facilitating disaster response, relief and reconstruction as shown in Table 3. These findings contrast the findings of (Mahul and Stanley, 2010) that argued that the budget processes in many countries do not allow governments to reallocate budgets post disaster hence creating liquidity crunches in an event of a disaster. Besides, 86.67% of the respondents acknowledged that their budget processes are flexible enough to allow for budget reallocation post disaster with a mean of 1.85. Although on domestic credit, 60.0% of the respondents indicated that there are no financial policies guiding the utilization of domestic credit facilities even as 33.3% of the respondents indicated that their organizations have financial policies guiding on the operations of domestic credit facilities.

Forty three point three percent (43.3%) of the respondents were not sure whether the Kenyan domestic credit market is favourable in financing disaster related activities. However, 36.7% felt that the domestic credit market is not favourable for the financing instrument to be used (Table 3). Cardona (2007) results revealed that the domestic credit market is mainly favourable for short-term emergency business model of disaster risk reduction because the instruments’ costs and maturity period are serviceable within one fiscal year. Forty eight point three per cent (48.3%) were not sure whether there are financial policies guiding the utilization of the facility in their organization while 21.7%, expressed that there is no financial policy existing in their organizations on external credit facilities. However, 38.3% of the respondents indicated that their organizations have benefited from the external credit facilities while 41.7% were not sure whether their organizations have benefited from the external credit facilities or not.
reallocation in order to provide funds in the areas of need whenever an event occurs and funds are not sufficient? Are your budget processes flexible enough to allow for budget reallocation post disaster?

<table>
<thead>
<tr>
<th>Description</th>
<th>Yes(1)</th>
<th>Not Sure(2)</th>
<th>No(3)</th>
<th>Mean(SD)</th>
<th>Kurtosis</th>
<th>SE=0.129</th>
<th>Skewness</th>
<th>SE=0.253</th>
<th>χ²</th>
<th>Df=3</th>
<th>P=0.001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your organization do budget reallocation in order to provide funds in the areas of need whenever an event occurs and funds are not sufficient?</td>
<td>48(80.0%)</td>
<td>2(3.33%)</td>
<td>10(6.67%)</td>
<td>1.56(0.98)</td>
<td>-0.564</td>
<td>-0.218</td>
<td>-0.312</td>
<td>147.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are your budget processes flexible enough to allow for budget reallocation post disaster?</td>
<td>20(33.3%)</td>
<td>4(6.7%)</td>
<td>36(60.0%)</td>
<td>3.41(0.46)</td>
<td>0.441</td>
<td>0.324</td>
<td>162.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In your opinion, is the domestic credit market in Kenya favourable for financing disaster related activities?</td>
<td>12(20.0%)</td>
<td>26(43.3%)</td>
<td>22(36.7%)</td>
<td>2.24(0.32)</td>
<td>0.246</td>
<td>0.321</td>
<td>187.43</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do the financial policies in your organization allow for domestic credit facilities?</td>
<td>18(30.0%)</td>
<td>29(48.3%)</td>
<td>13(21.7%)</td>
<td>2.04(0.47)</td>
<td>0.142</td>
<td>0.318</td>
<td>176.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does your organization have policies to guide in external credit sourcing?</td>
<td>23(38.3%)</td>
<td>25(41.7%)</td>
<td>12(20.0%)</td>
<td>2.12(0.43)</td>
<td>0.124</td>
<td>0.261</td>
<td>164.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have your organization benefited from external credit facilities?</td>
<td>208x644</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1. SD-Standard Deviation, SE-Standard Error, P-Pearson chi-square value, Df-Degrees of Freedom

Source: Field Survey Data (2016)

Table 3: Budgetary re-allocation, domestic and external credit consumption in disaster risk reduction

**Disaster Risk Reduction Measures Employed in the Kenyan National Disaster Platform**

The researcher sought the views of the respondents on various aspects of risk reduction activities or measures taken by their organizations and the following results were obtained as summarized in table 4. Forty percent (40%) of the respondents disagreed that capacity development is adequately done by their organization. Besides, 40% were also not sure of whether their organizations are doing capacity development to the target groups. However, 20% agreed that capacity development is adequately done by their organizations. These findings are in disagreement with the findings of (Hickey, 2011) which revealed that 56% of the organization involved in disaster risk reduction engage in the capacity development of the target group in East Africa. He further argued that these organizations activities help the disaster risk elements to resile from or spring back from a shock. Kema (1984) findings contradict these findings by revealing that in Nigeria, the corporate social responsibilities the multinational organizations engage in such as education for the poor children has greatly built the capacities of their family in...
Table 4: Disaster risk reduction measures by the organization involved in the disaster risk reduction in the Kenyan national disaster platform

<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
<th>%</th>
<th>Count</th>
<th>%</th>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>In your opinion do you agree that capacity development is adequately done by your organization</td>
<td>10</td>
<td>(20%)</td>
<td>20</td>
<td>(40%)</td>
<td>20</td>
<td>(40%)</td>
</tr>
<tr>
<td>In your opinion do you agree that resilience level is adequately done by your organization</td>
<td>10</td>
<td>(20%)</td>
<td>20</td>
<td>(40%)</td>
<td>20</td>
<td>(40%)</td>
</tr>
<tr>
<td>In your opinion do you agree that coping capacity is adequately done by your organization</td>
<td>10</td>
<td>(20%)</td>
<td>20</td>
<td>(40%)</td>
<td>20</td>
<td>(40%)</td>
</tr>
<tr>
<td>In your opinion do you agree that advocacy activities is adequately done by your organization</td>
<td>10</td>
<td>(20%)</td>
<td>20</td>
<td>(40%)</td>
<td>20</td>
<td>(40%)</td>
</tr>
<tr>
<td>In your opinion do you agree that mitigation measures is adequately done by your organization</td>
<td>10</td>
<td>(20%)</td>
<td>20</td>
<td>(40%)</td>
<td>20</td>
<td>(40%)</td>
</tr>
<tr>
<td>In your opinion do you agree that preparedness is adequately done by your organization</td>
<td>10</td>
<td>(20%)</td>
<td>20</td>
<td>(40%)</td>
<td>20</td>
<td>(40%)</td>
</tr>
<tr>
<td>In your opinion do you agree that early warning system is adequately done by your organization</td>
<td>10</td>
<td>(20%)</td>
<td>20</td>
<td>(40%)</td>
<td>20</td>
<td>(40%)</td>
</tr>
</tbody>
</table>

Table 4: Disaster risk reduction measures by the organization involved in the disaster risk reduction in the Kenyan national disaster platform

Source: Field Survey Data, (2016)

This kind of response was similarly replicated when the respondents were requested to give their opinion on whether their organization adequately do resilience building, coping capacity, advocacy activities, mitigation measures, preparedness measures as well as development of early warning systems.

These findings also concur with the revelations of what is happening currently in Kenya where people staying in Baringo county and the Northern part of the country are facing starvation due to prolonged droughts (GoK, 2017). Poor early warning systems, lack of preparedness, late mitigation measures, disjointed resilient building and capacity development of the risk elements.

The Relationship between Post-Disaster Risk Financing Instruments and Risk Reduction

and risk reduction in the Kenyan national disaster platform. The post disaster risk financing instruments index of the independent variable was correlated with the risk reduction index. The results are as presented in Table 5.

The results in table 5 indicate that there is significant association between post-disaster risk financing instruments and risk reduction in the Kenyan national platform (r = 0.286, p = 0.000<0.01). This means that post disaster risk financing instruments influence risk reduction. It means that there is a positive and significant relationship between post-disaster risk financing instruments and risk reduction in the Kenyan national platform. The results are in agreement with the findings of (Gilarid, 2013) which showed that donor assistance, borrowing by the state of
Table 5: Results of Pearson’s product moment correlation coefficient test on the relationship between post-disaster risk financing instruments and risk reduction.

<table>
<thead>
<tr>
<th>Post disaster risk finance instruments</th>
<th>Pearson’s correlation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>Sig.(2-tailed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.286**</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

**correlation significant at the 0.01 level (2-tailed)

Source: Field Survey Data (2016)

Hypothesis Test Results for the Effect of Post-Disaster Risk Financing Instruments on Risk Reduction in the Kenyan National Disaster Platform

The study tested the effect of post-disaster risk financing instruments on risk reduction in the Kenyan national disaster platform using multiple regression analysis: H₀₁: There is no significant relationship between post-disaster risk financing instruments and risk reduction in the Kenyan national disaster platform.

The hypothesis testing was done after establishing the existence of a relationship between post-disaster risk financing instruments and risk reduction using Pearson’s product moment correlation coefficient tests. The results of the hypothesis test were presented in table 5.

Table 6: Hypothesis testing results using multiple regression analysis on the effect of post disaster risk financing instruments on risk reduction in the Kenyan national Disaster platform

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Standardized Beta Coefficients</th>
<th>Sig. p≤0.05</th>
<th>Null hypothesis</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-disaster risk finance instruments</td>
<td>.015</td>
<td>.000</td>
<td>H₀₂</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

Dependent variable: Risk reduction

Source: Field Data (2016)
John Byaruhanga, Oseno Ben., "Post-Disaster Risk Financing Instruments as a Strategic Financing Option for Disaster Risk Reduction in the Kenyan National Disaster Platform."

From the study results in table 6 the study rejected the null hypothesis. This led the study to conclude that post disaster risk financing instruments affected risk reduction in the Kenyan national platform at $P \leq 0.05$ level of significance.

**Conclusion and Policy Implications** The article has revealed that post disaster risk financing instruments directly contribute to disaster risk reduction in the Kenyan national disaster platform. The findings have distinct policy relevance in several aspects. The response, recovery, reconstruction among other post disaster activities require financial resource which call for a post-disaster risk financing strategy. There is need to enhance resilience building, capacity development of the element at risk, warning systems as well as undertaking mitigation disaster measures as disaster risk reduction activities. One of the most effective guarantees of state preparedness for post-disaster risk reduction is the establishment of a national revolving fund to finance disaster risk reduction activities.

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