DISASTER RISK FINANCING MODEL

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IJMSSSR 2020
VOLUME 2
ISSUE 3 MAY – JUNE **ISSN: 2582 - 0265**

Abstract: Disaster risk financing model is a framework aimed at harnessing financial resources to be invested in disaster risk management. These frameworks are domesticated according to the unique nature of the countries of concern in terms of governance structures, relevant Acts of legislation among others. Generally, disaster risk financing comes into two categories namely; pre-disaster and post-disaster risk financing. While pre-disaster risk financing instruments are applied before a disaster occurs, post-disaster risk financing instruments are obtained after a disaster for relief and recoveries. The Kenyan specific proposed disaster risk financing model is inclined to the pre-disaster risk financing instruments because it is meant to be proactive in its mobilization structure to strengthen institutions and enhance resilience in preparing for, responding to, and recovering from disaster impact. The proposed model is a paradigm shift from the emergency aid-business model which is unsustainable, reactionary, and unreliable as well as being media coverage dependent. This model encapsulates four tiers with the first tier being the individual person and organizational units. The second tier is made up of Ward and Sub-county units as the third tier ropes in the county governments and national government. Remember these two tiers form the structure of governance in Kenya as the 2010 Kenyan constitution outlines. The last tier is called the extra tier which is made up of the international organizations following their history of supporting countries in an event of disasters. Such bodies include the World Health Organisation (WHO), African Development Bank (AfDB), the World Bank (WB), and International Monetary Fund (IMF) among others. This holistic disaster risk financing model will be managed by an independent legislatively established disaster body called the Disaster Risk Management Authority of Kenya (DRMAK)

Keywords: Disaster Risk Financing

MODEL VISION

To be a holistic practical disaster risk financing framework in a dynamic risk prone environment

MODEL MISSION

To promote coordinated mobilization of disaster funds for enhanced disaster prevention, mitigation, preparedness, response and sustainable recovery.

MODEL PHILOSOPHY

To invest a shilling in disaster management now and save between four to seven shillings in the long-run

1.0 MODEL DEVELOPMENT OVERVIEW

The proposed Disaster Risk Financing Model is a holistic practical framework whose main objective is to promote mobilization of disaster funds in a well-coordinated approach to strengthen institutions, enhance resilience through prevention, preparedness, mitigation and sustainable recovery. Disaster risk management represents value for money as the World Bank estimates that for every dollar invested in disaster risk management, between four to seven dollars are saved in the long-run. The real threat of corona virus pandemic that has gripped the entire world which requires significant financial, technical, physical, information and human resources to respond to, prepare for and recover from persuaded us in conceptualizing and designing the proposed Disaster Risk Financing Model for Kenya.Further, Gurenko & Lester (2004), Ghesquiere & Mahul (2007) noted that to help countries reduce their reliance in post-disaster external assistance, the World Bank supports a country risk financing framework which are partly based on corporate risk management principle but also considers economic and social factors such as the government's fiscal profile and living condition of the poor. Some of these demographics perfectly fit into the Kenyan context hence the urge to develop our own disaster risk financing facility.

It is vital to note that, if the highly tested healthcare systems in the larger economies such as China, Italy, Spain, Iran among others seems to have been overwhelmed by the peak infection phase of the deadly virus, the largely untested healthcare system in the low and middle income economies with a host of vulnerable groups could easily be overwhelmed in terms of response to the Covid-19 and recovery from its impact. Therefore, this financing framework may help in coordinating mobilization of funds and other much needed materials which are critical in disaster prevention, mitigation, preparation, response and recovery in Kenya.

In addition, it is important to recognize that as a country we have not had a holistic disaster risk financing framework linking the two levels of government, other bodies engaged is disaster management, organizational units and individual persons. The proposed Disaster Risk Financing Model provides the country with an opportunity to fill the gaps in mobilizing funds for disaster prevention, mitigation, preparedness, response and sustainable recovery. However, it is also necessary to acknowledge that the government had come up with an aspect of disaster risk financing strategy and one of its strategic priorities was to ensure coordination between the national and county governments, the idea is yet to be operationalized at the National Treasury where it is domiciled.

The lackluster-like posturing of the National Treasury is encouraged because there is no legislative body established by an Act of Parliament to fast-truck and model a robust financing strategy to enhance mobilization of funds to be invested in disaster risk management. The proposed financing framework is a departure from the disjointed efforts the government is experimenting with, in the wake of frequencies, complexity, scope and severity of destruction level of disasters.

1.1 CONCEPTUALIZING THE PROPOSED MODEL

The proposed Disaster Risk Financing Model (DRFM) is conceptualized in figure 1. The model basically is divided into four tiers, with organizational units and individual persons as the first layer of mobilizing disaster risk management funds. The other tiers are Ward and Sub-county units, followed by the county governments and national government tier. The last tier is made up of the international community and the tier is known as an extra tier.

Disaster Risk Management Authority of Kenya (DRMAK) will be the solitary body overseeing and coordinating disaster risk management activities in the country. The proposed framework of financing is based on international frameworks, theories and plans. It is assumed that with these in place, the objectives to be achieved will be enhanced disaster prevention, preparedness, mitigation, response and recovery.

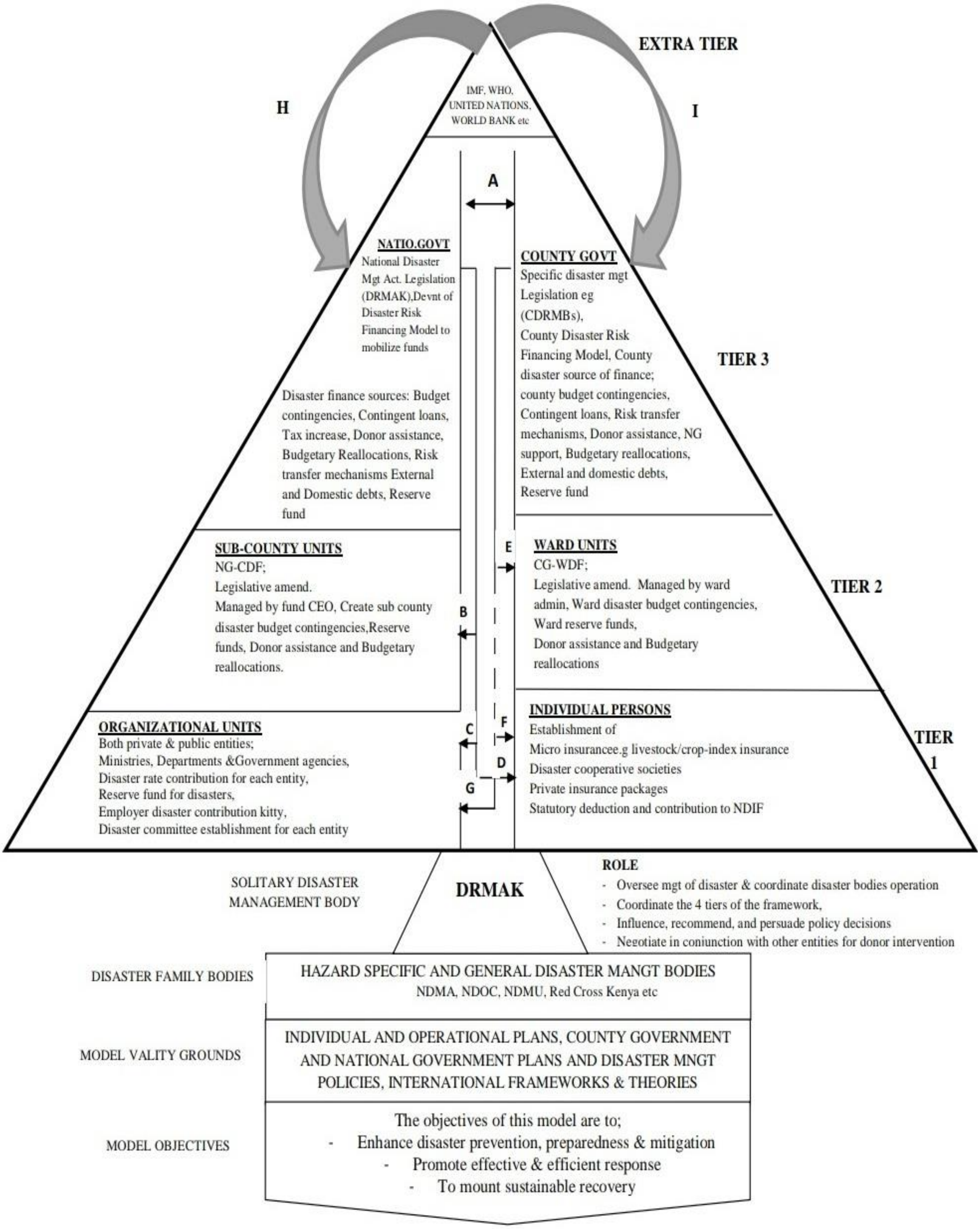

Figure 1: Conceptualizing DRFM tiers, their relationships, disaster management bodies, foundation of establishment and objectives of the financing framework.
Source: Oseno&Obiri(2020)

1.2SPECIFICS OF THE FINANCING MODEL

The proposed Disaster Risk Financing Model is divided into four tiers namely: tier one which is made up of individual persons and organizational units, the second tier is composed of Ward and Sub-county units, followed by the county governments and national government in the third tier. The last tier of the model is made up of the international organizations such as the World Bank Group, United Nations, and International Monetary Fund as well as the developed economies like the United States among others.

Tier 1: Individual persons and organizational units.

Tier one is the lowest tier in the model and it is made up of the following elements;

i) **Individual persons**

The emergency-aid business model of financing disasters is unsustainable, slow in responding, dependent on media coverage and it is quite uncertain thus a better proactive model of financing disaster management is necessary. This is the gap that this four tier model is interestedin bridging. The model emphasizes that the first line of defense is an individual person. Therefore, through public intervention approaches of awareness, advocacy and education, individual persons would be able to understand the role they play in cushioning themselves from the impact of disasters by using part of their personal income, as well as aportion of any of their belongings.

The establishment and operationalization of tailor-made risk transfer mechanisms such as micro-insurance schemes, Disaster Co-operative Societies, National Disaster Insurance Fund (NDIF) contributions and as a statutory deduction for those employed as well as private insurance packages would help mitigate the impact of disasters. In the same principle of emphasizing contribution to the National Hospital Insurance Fund, the same should apply in people being persuaded to contribute to the established National Disaster Insurance Fund. When effective programmes can as well be developed to educate the public about the benefits of these creative cautionary interventions, it will increase literacy.

The micro-insurance packages being piloted by the national government in conjunction with the World Bank mirrors closely to the financing framework proposed. The livestock-index insurance product in Moyale and crop-index insurance in Vihiga help cushion the farmers during adverse weather conditions.

Success cases of subsidized micro-insurance indexed base models are in the U.S, India and Mongolia. In 2006, the U.S crop insurance premium subsidies were $2.3billion which was 60% of the total insurance premiums, meaning that the farmers paid on average 40% of the total insurance cost. The Indians National Agriculture Insurance Scheme (NAIS) a government sponsored crop insurance program me to protect Indians farmers against the adverse weather events and pests infection. The Index-Based Livestock Insurance program me was established by the government of Mongolia to protect herders against excessive livestock mortality. More than 550,000 animals are currently covered under this program me.

Sacco societies are viable economic vehicles in mobilizing savings and advancing credit with flexible terms, also Housing Co-operative Societies are aimed at deepening domestic and commercial housing investment for better living standards and cash inflows. The model is proposing an establishment of special interest group co-operatives particularly vulnerability or/ Disaster Risk Co-operative societies to cushion the members from the impact of disasters by financing early evacuation, sourcing for drought resistance crops for the members, and even some compensation although not a shilling for a shilling or more due to a larger membership who may be affected at the same time.

ii) Organizational units

Organizational units have a role to play in mobilizing funds for disaster risk management from operating income. Both the private organizations and public entities such as ministries, departments and government agencies should contribute to the disaster kitty at an agreeable rate. Besides, each organization is to give budgetary provision for annual allocations to an emergency vote in the organization. The amount can later be transferred to a reserve fund when it is not used in a particular year to build a reserve for any future eventuality.

We have seen strong wind rip-off roofs of a number of learning institutions in the country and the heads of such institutions desperately look for funding to make-up for the situation. It is at such times when we invoke the use of reserve funds. The access of the reserve funds should not be at the pleasure of the management of such institutions because it may be abused. Therefore, a relatively higher authority from the line function should be sought in consultation with the Disaster Risk Management Authority of Kenya (DRMAK)

Tier 2: Ward and sub-county units

Tier two widens the scope of the framework in recognition of the jurisdiction administrative units as outline in the constitution of Kenya 2010.

i) Ward units

The issue of "Ward Fund" is a matter of when and not if because looking at the structure of managing public financial resources in Kenya, it is at the trajectory of grass-root orientation. The issue has been debated in the public discourse for a while now. Assuming legislative framework shall be in place for the "Ward Fund", it will be roped in to contribute to the proposed disaster risk financing framework. The fund will be managed by the Ward Administrator. The fund will be called ward emergency kitty and it will have an annual budgetary provisions. A reserve at the ward level may be accumulated over the years to be used in disaster management at that unit of administration.

The frequencies, complexity, scope and severity of destruction level of disasters have become serious with the lower units more exposed and vulnerable, hence the need to strategize for holistic financing framework to rope in every unit of administration. Budgetary reallocations and donations are among other financing options at this unit level which may be used to build a disaster risk fund in preparing for, responding to and to mount a sustainable recovery.

ii) Sub-county units

Legislative amendments may be required on National Government Constituency Development Fund (NG-CDF) to widen its scope of operations to include disaster management clauses. The fund Chief Executive Officer (C.E.O) will still be in charge of disaster kitty at that level of administration. Annual budgetary appropriations will be done at a rate premised on the NG-CDF Act. This will allow for accumulation of reserves at the sub-county level in militating against disaster impact, enhancing preparedness, prevention and response.

In addition, budgetary reallocations and donor assistance will add into sub-county disaster management kitty. It is important to note that the solitary national body, Disaster Risk Management Authority of Kenya (DRMAK) will oversee and coordinate disaster management activities in all the four tiers by providing the necessary policy frameworks on how to build and use contributions to the various disaster funds. Besides, the DRMAK will also establish a national disaster fund called Disaster Risk Management Fund (DRMF) to pool funds from the different tiers of the proposed Disaster Risk Financing Model including the sub-counties for disaster risk management.

Tier 3: County governments and national government

Tier three is the apex level within the country framework of administration. Traditionally this tier has been the last resort in many disaster events. Thus, the lower two tiers are aimed at lessening the burden for this tier. No wonder more often than not the tier gets easily overwhelmed under such devastating situations exposing citizens and their properties to disaster risks whose consequences are dire.

i) County governments

Legislation on County Disaster Management Acts unique to each county government is necessary because the counties face different hazards. The Acts will create County Disaster Risk Management Boards (CDMBs), just as we have County Education Board for each county to execute education issues at the county level, the same should also apply here as the proposed Disaster Risk Financing Framework postulates. County governments form a critical component in this proposed financing framework because of the scope of their operations, financial framework, and autonomy of their administration.

First, the model proposes establishment of County Disaster Risk Financing Model (CDRFM) to mobilize funds and coordinate disaster risk financing management activities within each county.

The CDRFM will be operating within the confines of established County Disaster Management Policy (CDMP) inoperationalizinghow the framework works. The probable source of disaster risk financing at the county level will include; budget contingencies, contingent loans, risk transfer mechanisms, donor assistance, budgetary reallocations, taxation, county reserve funds, external and domestic debts.

With the Capital Market Authority (CMA) giving some county governments this year in March the green-light to source for funds at the capital market, this has widened the scope of financing options for these devolved units. Such counties includes Kisumu, Bungoma and Makueni counties whose assessment reports by CMA indicated that the operations of the counties are fairly stable, hence allowing them to the league of capital market players.

The National Government Affirmative Action Fund (NG-AAF) also falls within the county governments administrative jurisdiction thus the fund's Act will require amendments to include disaster risk management clauses. This will see the creation of NG-AAF disaster reserve fund, emergency fund, undertake budgetary reallocations in an event of a disaster as well as seek donor assistance. Also the county governments may receive support from the national government, a phenomenon that has been experienced since the advent of the devolved system of governance in an event of a disaster. The CDMBs will be at the centre of executing these activities in a well-coordinated manner, in conjunction with the national disaster authority DRMAK.

ii) National government

To operationalise the proposed Disaster Risk Financing Model, the national government must put appropriate legislation in place such as National Disaster Management Act to establish Disaster Risk Management Authority of Kenya (DRMAK). The role of this body will be to oversee disaster management in the country as well as coordinate the operations of different tiers proposed in this model of disaster risk financing. In addition, it will harmonize activities of hazard specific disaster management bodies such as National Drought Management Authority (NDMA) among other entities and also check on the non-specific hazard oriented bodies such as Red Cross, Kenya. The DRMAK will also establish Disaster Risk Management Fund (DRMF) to harness funds from all the four tiers as well as the other exiting bodies such as Catholic Relief Services (CRS) among others.

In addition, DRMAK will results into collapsing of the fragmented and cash strapped government disaster management bodies such as National Disaster Operation Centre (NDOC), National Disaster Management Unit (NDMU) into one entity for better coordination and operations of disaster management activities in the country.

It is necessary to emphasis that the national government acts as a reinsurer of the last resort without knowing specifically its catastrophe risk exposure. The contingent liability of the government due to natural disasters is often implicit, as the laws do not usually clearly define the financial responsibility of the government when a country is hit by disasters. Therefore, by understanding full exposure and the extent of public intervention in recovery efforts, it is possible to ascertain the government's contingent liability, a critical component of disaster management which the proposed financing model is bringing to the national table.

The DRMAK will help the relevant agencies in conceptualizing, designing and developing disaster risk management policies but more importantly is implementation with financing options as critical strategy implementation variables. The national government financing options will include; budget contingencies, contingent loan facilities, tax increase, risk transfer mechanisms, external and internal debts, donor assistance, budgetary reallocations and establishment of a reserve fund called National Disaster Risk Reserve Fund (NDRRF). The fund will be managed by the DRMAK.

Extra tier: The international community

The naming of this tier "extra tier" is telling because while the other three tiers are within the management of DRMAK, the extra tier is not controlled by the authority. However, for seamless operations of disaster management activities in the country, DRMAK will link the family of the extra tier to the areas and bodies of their interest in enhancing disaster prevention, preparedness, mitigation, response and sustainable recovery.

The extra tier family includes the World Bank Group (WBG), International Monetary Fund (IMF) World Health Organization (WHO), United Nations (UN), developed economies such as United States (US) among others. These organizations have a known history of interventions at various levels in different forms such as financial, technical support, material and physical resources in an attempt to mitigate disaster impact across the globe.

A case in hand is the emergence of corona virus pandemic which has seen these bodies respond in terms of donations, and disbursement of contingent loan facilities to different countries such as Kenya, Iran and Uganda to fight the fast spreading deadly novel corona virus (2019 – nCoV).

These bodies mainly will be interacting with tier three entities because of the legal implications and the wider diplomatic framework requirements.

In a more sustainable approach, the World Bank established the Global Facility for Disaster Reduction and Recovery (GFDRR) in 2006 to facilitate comprehensive disaster prevention, risk management, increased investments in prevention and preparedness as well as disaster risk financing. A number of major donors have joined this partnership and in particular the GFDRR financial and technical assistance supports the development of national strategies and capacity-building interventions to enhance investment in risk reduction and risk transfer mechanisms.

Therefore, this proposed Disaster Risk Financing Model will give the Kenyan government an opportune national platform to engage the body and other similar organizations in a more structured, effective, organized and precise manner, in enhancing the proposed framework's capacity, operations, as well as benefiting from the dividends of strategic alliances.

1.3 ARROW LINKS IN THE MODEL [A-I]

The proposed Disaster Risk Financing Model is conceptualized in a set-up of interrelationship among the tiers of the framework. Arrow "A" shows the national government and county governments co-exist in a symbiotic manner in executing disaster risk management activities. Arrows "B and C" indicate that the national government has control of the disaster management activities at the sub-county level and organizational units save for those organizations which may be under control of the county government such as Disaster co-operative societies.

Although for arrow "D" it shows that at an individual person's level where initiatives such as micro-insurance activities are targeting individuals, the national and county governments are both engaged. This explains for arrows "G and F" also in the case of organizational units and individual persons. In addition, "E" represents full control of ward unit disaster operations under the county governments.

The extra tier arrows "H and I" are linking directly to both the national government and county governments in supporting disaster management activities in Kenya. The international community assisting counties is taking shape with the last case just at the beginning of March this year, the World Bank Group announced Kshs.20 billion support for about 24 counties in Kenya. Among the parameters they considered was effective and efficient management of public financial resources of the selected counties.

1.4 THE MODEL VALIDITY GROUNDS

The premises upon which the proposed Disaster Risk Financing Model is based are a number namely; individual and organization plans. This is the lowest foundation of the model which recognizes personal financial plans of individual persons as persuaded by the principles of personal financial management. This will see prioritization of micro-insurance premium or Disaster co-operative society's contribution by individuals being scaled higher in the scale of preference of an individual person. Besides, personal emergency and contingency plans also add to the establishment of cautionary facility which can be easily accessible at the time of disaster response call, preparation, prevention, mitigation and recovery measures by an individual.

Second is the organizations emergency or contingency and strategic plans. The aspect of business continuity plans are premised on risk mapping and recommending relevant responses to the risks in the functional areas identified. The contingency plans of organizations answer among other questions "how to get it done" which means planning for the financial resources to execute the operations of the contingent plan. This is the pillar among others; the proposed model draws its validity from. The third foundation is the disaster management policies at the various levels of governance and organizational units which are keen on design, implementation and evaluation. The implementation strategies are usually backed by financing aspects to actualize the policies, a kin to the proposed Disaster Risk Financing Model.

The international frameworks which Kenya is a constituent also highly validate the proposed model. For example, the Sendai Framework of 2015-2030, Hyogo Framework for Action 2005-2015 and the Bali-UN Framework as well as Sustainable Development Goals. These frameworks emphasize disaster risk reduction by strengthening institutions to enhance resilience measures, increase preparedness, and organize for appropriate response and a well-coordinated recovery which is the hallmark of this proposed financing model.

Finally, theories have a role to play in qualifying the proposed Disaster Risk Financing Model. In this regard, two theories of market intervention are in play; the Public - Interest Theory and Market-Enhancing Theory. The laissez-faire nature of handling disaster risk management has badly exposed and made us highly vulnerable to disaster impacts as a nation. Therefore, Public-Interest Theory as developed by Musgrave and Musgrave 1984 is of the view that the existence of market failures such as adverse selection, moral hazards, economies of scale or externalities can lead to a sub-optimal allocation of resources, and that government intervention targeted at addressing these market failures can improve welfare. Thus, the proposed model is a government tool of intervention in correcting the disaster management market failures for improved welfare of the Kenyan citizens.

The Market-Enhancing Theory was developed by Lewis & Murdock 1996, 1999 respectively. The theory too recognizes that market failures can create sub-optimal allocation of resources and that private sector coordination is not always effective. The theory here holds that, public policy should facilitate the development of private market but not replace the private players for instance by improving information flows, and ensuring fair play in the market. As an example, the market enhancing view would suggest that a government funded catastrophe risk mapping program me would provide valuable information to the market on catastrophe risk zones, but that the provision of catastrophe insurance should be left to private institutions.

The theory also recognizes that government intervention can help facilitate the creation or enhancement of private institutions for solving market failures. Therefore, government policies on micro-insurance products, establishment of Disaster co-operative societies, DRMAK, CDMP among others are enhancing mechanisms the proposed Disaster Risk Financing Model employ in disaster risk management enhancement in the dynamic environment.

1.5 CONCLUSION

The proposed disaster risk financing model for the Kenyan government is new and unabridged thus if it is carefully implemented with appropriate management of the specific bodies proposed to be established, it may help in preparing for, preventing, mitigating, responding and recovering from disaster impact.

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