Achieving Sendai Framework in Africa: Progress and challenges toward Target E

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Abstract
Disaster risk reduction (DRR) strategies are critical for formalizing effective disaster risk reduction. The overall objective of this study was to assess the progress the Africa Union member states are making in developing DRR strategies as required by Target E of the Sendai Framework. The study used both qualitative and quantitative approaches where in-depth desk review of DRR strategies and online questionnaires were administered to 53 respondents. The findings shows about 68 % of the AU member states have national strategies and 35 % have sub national strategies but generally there is sluggish progress in updating DRR strategies in accordance with Sendai Framework Target E. Weak technical and institutional capacities, inadequate funds, limited decentralization of DRR and poor governance are key challenges hampering their implementation. Governments in Africa and partners should pay immediate attention to accelerate development of risk-informed strategies to achieve the aspirations of the Sendai Framework.

Key words: DRR Strategies; Resilience; Sendai Target E; Risk informed-planning

1. INTRODUCTION
Africa countries face a myriad of development challenges from poverty and environmental degradation to rapid population growth and urbanization that they are struggling to surmount though development planning. These development challenges interact with natural and human induced hazards to create disaster risks which have potential cascading impacts across the continent (Fraser et al., 2017). Building societal resilience to prevent losses and damages to assets and livelihoods from disasters is a major concern of the disaster risk reduction strategies and plans. The Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030, adopted by 187 UN member states at the third World Conference for Disaster Risk Reduction in Japan in 2015 has commitment governments to develop and implement their strategies, policies and plans. The aim of the Sendai Framework stated as a goal is to ‘substantial reduction in disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries’. The stated outcome is ‘Prevent new and reduce existing
disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience’ (UNISDR, 2015). Implementation of the Sendai Framework is expected to mutually reinforce the implementation of the Sustainable Development Goals (SDGs), the Paris Agreement and further contribute to achieving Agenda 2063 commitment ‘The Africa we want’ (UNDRR, 2019; Manyena, 2016). The progress in achieving the stated goal and outcome is progressively being monitored by seven targets and four priorities of action.

Africa Union (AU), in consultation with her member states and stakeholders, revitalized their commitment to the implementation of the Sendai Framework by updating the Programme of Action (PoA) to be in line with the Sendai Framework. The PoA that was later endorsed by the member states, received overwhelming support by the Africa Heads of States and Governments as means of stepping up efforts to achieve sustainable development and address disaster risks in a holistic manner in the continent (AU 2017). In line with the Sendai Framework, PoA requires collaborative engagement of various stakeholders such as Non-Governmental Organizations (NGOs), the academia, research organizations, the media and donors among others to work in tandem in supporting governments to implement the strategies (6)van Niekerk, 2020). In 2018, for instance, the Intergovernmental Authority on Development (IGAD) developed their regional strategy in consultation with a variety of stakeholders where the author also participated. Member states are required to develop their strategies in line with the Sendai Framework, the PoA and the sub regional strategies. The AU with six economic communities plays a strategic guidance role to the member states in development and implementing the strategies in line with the Sendai Framework (AUC, 2016).

The global assessment report on disaster risk reduction of 2019 ( UNDRR, 2019a) emphasizes that the member states who endorsed the Sendai Framework have the primary and overall responsibility of designing and implementing these strategies. They can are required work collaboratively with other stakeholders from civil society organizations, private sector and development organizations in the design and implementation of the strategies. Depending on the context of the country, the DRR frameworks can take many forms such as disaster laws, policies, regulations, strategies and plans. The plans or strategies form the basis of understanding disaster risks, assigning responsibilities to stakeholders, allocating resources for resilience building and enhancing gender equity and the involvement of persons who are more exposure and vulnerable to the disaster impacts (UNDRR, 2019b).

This paper discusses the progress the member states of the AU are making in achieving the Sendai Framework Target E. According to the SFDRR, Target E was required to be achieved by 2020 so that it can guide implementation of other DRR activities that can contribute to reducing risks and strengthening resilience. The paper first discusses the risk profile of the continent, then the concept of DRR strategies and the critique to DRR strategies in the Africa context. Materials and methods are presented in section 2 together with variables for measurement. The findings and discussions section are presented in section 3 followed by key conclusions.
Disaster risks and vulnerabilities in Africa

Africa has made remarkable strides in economic growth averaging 4.5 per cent in the last two decades. There has been remarkable improvements in life expectancy, school enrolment, and reduction in infant mortality since the turn of the century. The continent has a huge potential of economic growth with Gross Domestic Product (GDP) projected to hit over USD 20 Trillion by 2040 with youthful population driving the growth (UNECA, 2015). However, these development gains are under serious threat by disaster and climate change risks. The continent is exposed to a wide range of hazards mainly hydro meteorological such as floods, drought, landslides, storms and cyclones. Besides, the continent is exposed to small and every day hazards such as fires, localized floods, road crashes and pest and disease outbreaks that cannot be ignored as they cause a lot of human suffering. These disaster risks are deeply rooted in the continent’s inequality, environmental degradation, poorly planned but rapidly urbanizing settlements, state fragility and population explosion (Fraser et al., 2017). Consequently, this has seen the disaster incidents to exponentially grow in Africa. Records from EM-DAT statistics show that Africa is exposed to and suffered over 20 disasters with the eastern and southern Africa recording the most disaster events and sustaining the greatest losses in lives and economic aspects particularly in the period 2015-2019 (AUC, 2019; Figure 1). Disaster risk is conceptualized to depend on the interaction of these natural or human induced hazards with vulnerable populations, livelihoods, assets or the environment to culminate into a disastrous event (IPCC, 2012).

For decades, drought disaster has continued to have devastating impact on people, livelihoods and economies particularly in the eastern, southern and western parts of the continent. For instance in the period 1900 – 2013, the continent witnessed 642 drought events that affected nearly 2 billion people and killed 11.7 million people (Masih et al., 2014). In the Eastern Africa region between 1900 – 2017, over 100 drought events, fuelled by climate variability and change have occurred, affecting 217 million people and claiming 572 000 lives (Haile et al, 2019). Moreover, in the recent past there has been more severe and sustained drought events of continental scale. These include the 1999–2002 drought in northwest Africa, the Sahelian droughts of 1970s and 1980s, the 2010–2011 drought in the Greater Horn of Africa (HoA), the 2001–2003 drought in southern and south-eastern Africa, with evidence suggesting multi-year occurrence of drought in a single decade (EMDAT, 2020). The impact of drought is projected to increase in frequency and intensity by up to 54 percent by end of the 21st century as a result of climate change thereby putting development gains in the continent at risk (Haile et al., 2019). This has serious implications in development as it may worsen food security, undermine progress educational, weaken agriculture and livestock sectors and stagnate economic growth in the continent unless appropriate strategies are designed and implemented to mitigate the effects of droughts and disaster risks.
It is instructive to note that majority of the people impacted by disasters are the vulnerable and the poorest in the communities living on less that two dollars day. These vulnerable populations live in flood plains, coastal areas, hillsides, riversides and other high risk areas where they face a double burden of disaster risks and uneven development. This was clearly highlighted by the devastating impacts of cyclone Idai and Kenneth that hit Mozambique, Malawi and Zimbabwe in early 2019 where over 1,300 mortalities were recorded and another 3 million directly affected (Pelling and Garschagen, 2019). Most of the affected were the poor whose daily income was less than USD 1.9, lived in remote isolated places and in coastal settlements that were completed cut off from emergency services. This further aggravated the pre-existing vulnerabilities and poverty. Similarly, in Nigeria studies by Hallegatte & Rozenberg (2017) demonstrated that the poorest 20 per cent are 50 more likely to be lose their lives, livelihoods and assets as a result of drought thereby further exacerbating their vulnerability to shocks. The number of poor people living in extreme poverty is estimated to be on the rise in Africa and is projected that it is nearly 9 in 10 people will be living in sub Saharan Africa (World Bank, 2018), despite projected economic growth. This people are often disproportionately affected by disasters losing more of their wealth and less likely to cope and recover from hazard impacts highlighting the urgent need for their inclusivity in development planning to bridge the gap.

Thus, the continued rise in disaster risks as demonstrated by the damages and losses from recent
disasters is attributed to high vulnerability of the population, poverty and weak economies and is worsened by minimal coping capacities. Besides, the rapid population growth, poorly planned urbanization and climate variability and change is likely to make disaster risks complex and complicated (UNDRR, 2019b). This has seen persistent escalation in the continental disaster risk index from an average of 4.8 in 2015 to 5.4 in 2019 and the continent hosting over 10 ten countries in the top twenty out of 194 countries amidst developmental challenges and rising inequality (INFORM, 2020).

Disaster risk reduction strategies

Disaster risk reduction (DRR) strategies or frameworks are the cornerstone of reducing disaster risks and setting a formal strategic direction for building societal resilience to disasters and climate change risks. They are essential to cement the roles and responsibilities of various stakeholders involved in disaster risk management such as the governmental and development agencies, private sector, civil society organizations that are involved in DRR activities with active support and involvement of local communities who are most affected by disasters (IFRC, 2013). This is also reflected in the SFDRR 2015-2030 that provides for a clear policy pathway in guiding countries and communities to substantially reduce the effects of shocks caused by natural and human-induced hazards by 2030 compared to the 2005 - 2015 period (SFDRR, 2015). The DRR strategies or frameworks are tools that supports risk-informed planning and aids planners and decision makers to mainstream DRR into local and national development frameworks (UNDRR, 2017a). Thus, they are key in guiding and making integrated coherent plans and actions at both the national and level.

An effective DRR strategy should have clear targets, timelines and indicators to measure progress toward reduction of risks in the community. Additionally, the strategies should aim to reduce existing risk and new risk and provide mechanisms for managing residual risks where all-of-society engagement is required through a coherent and comprehensive action to achieve societal resilience (UNDRR, 2017a). According to Target E of the Sendai Framework governments were required to substantially increase the number of local and national DRR strategies and plans by 2020 that needs to be designed by addressing ten points to achieve Target E (UNDRR, 2015; UNDRR, 2017b). The extent of integrating the ten points, that is supporting monitoring progress in Target E, is measure of degree of alignment to the Sendai Framework which can also measure the quality of the strategies. The ten-point scale can be framed as questions to probe the quality of developed policies and strategies are:

i. If the policy has timescales and indicators and targets
ii. If it aims at reducing new risk
iii. If it aims at preventing the creation of new risk
iv. If it aims at strengthening economic, social and environmental resilience
v. If it addresses priority number 1
vi. If it addresses priority number 2
vii. If it addresses priority number 3
viii. If it addresses priority number 4
ix. If it promotes policy coherence
x. If it has mechanism for follow up and reporting.

There is consensus among many DRR practitioners that developing and implementing of DRR
strategies and plans in an integrated manner is crucial to reduce disaster risk in a comprehensive manner, a key outcome for AU member states in their sustainability trajectory. They should be developed to address the ambitions that are reflected in the Agenda 2063: The Africa we want, the Sustainable Development Goals (SDGs) and the Paris Agreement in coherent manner. These strategies and plans should embody the vision of the people and communities in relation to disaster risks, in line with the development objectives and priorities of the continent (UNDRR, 2017a; Peters, 2018; Fraser et al., 2017). Based on how they address disaster risk, the DRR strategies and policies promoted by the Sendai Framework can be categorized into three. These are: (a) DRR strategies and plans that prevent creation of new disaster risks through prospective disaster risk management activities focus on reducing risks that may develop in the future if DRR strategies are not put in place; (b) DRR strategies and plans that focus on reducing existing disaster risk through corrective disaster risk management activities which are meant to remove or reduce disaster risks that are already present and which need to be managed and reduced now through structural or non-structural measures; and (c) Strategies and plans that address residual risk in the community through compensatory disaster risk management activities which focus on building the environmental, health, social and economic resilience of individuals and societies in the face of anticipated residual risk through preparedness, response and recovery interventions and measures (UNDRR, 2017a).

Further research by the IFRC (2013), Wisner et al., (2012), van Niekerk (2015) and Nyandiko, 2020 validate the importance of DRR legislation, policy and/or plan and emphasize the significance of adequate disaster risk governance, involvement of decision makers and political leaders, effective decentralization of DRR and strengthening of institutional capacities. These researchers particularly highlight the importance of de-centralizing disaster risk reduction measures to sub national and community levels where the effects are most pronounced due to the location and concentration of vulnerable populations and assets that require corrective and prospective disaster risk management measures. Decentralization of DRR has also potential to address marginalization of communities, enhance conflict resolution, reduce inequality and augment provision of goods and services (Oloo, 2007; Amolo, 2010). The other reason advanced for decentralization for DRR is that it is effective in promoting productive efficiency, promotes pro-poor policies, encourages participation of the at risk communities and promotes transparency and accountability in governments (Nyandiko, 2020).

It is important to note that we are already past the year 2020 when Target E was set to be achieved. As we proceed toward 2030 countries need to be supported to accelerate the implementation of the DRR strategies developed to meet the ambition of Target E which contributes to achieving the SDGs in Africa. Given that most countries in the continent suffer from acute governance and fragility challenges that would divert attention from investing in DRR, there is need to address the interlinked challenges of DRR, conflict and state fragility as well as climate change. This can be achieved with the support of the development partners, academic and the civil society in a comprehensive and integrated manner as critical enablers for building resilience in Africa (Peters, 2018).

Gaps in DRR strategies and plans or frameworks

Studies have has shown that many DRR strategies are deficient in embracing decentralization, inadequate in providing for community participation, lack coherence with the Sustainable
Development Goals and other development frameworks. Besides, majority of the existing DRR strategies have been found to focus on managing disasters, lack comprehensive measures for risk management and are generally wanting in clarifying roles and responsibilities of the many stakeholders involved in DRR (Van Niekerk, 2015; Nyandiko, 2020). A number of DRR strategies in Africa have been found not actionable due to lack of dedicated resources for their implementation, have limited technical and institutional capacities and lack ownership from national and local leaders (UNDRR, 2017a; Manyena, 2016). Additionally, some DRR strategies have shown to lack an inclusive and transparent governance mechanism at national and local levels.

Research has also shown that the first step in developing and implementing DRR strategies is the establishment of a coordination mechanism or identifying and enhancing an existing one at both national and community levels. In many countries and some sub-national governments a coordination mechanism focused on DRR issues such as the National Platform for DRR or Local Platform for DRR is operational such as Kenya but deficiency in technical knowledge for DRR is hampering its effectiveness (Pelling and Holloway, 2006; Nyandiko, 2020). Most of the DRR strategies and plans in Africa seek to be aligned to the global Sendai framework as well as the continental Programme of Action (PoA) that is guiding the AU and the member states towards building disaster resilience in the continent. Given that there is evidence of continued impact of the disasters on economies, assets, people and livelihoods in the continent, the relevance of these global and continental policy frameworks in contributing to effective risk reduction in Africa is highly being questioned. According to the Risk Inform Index most countries in Africa have shown significant increase in the risk index due to increased exposure of assets and livelihoods and partly because of increased frequency and intensity of hazards driven by climate variability change (INFROM, 2020; AUC, 2019). Somalia, South Sudan, Central Africa Republic and Congo top the list of countries in the continent with the highest risk index from the East Africa Community (EAC) and Inter Governmental Authority on Development (IGAD) sub regions having the highest risk index (INFORM, 2020). There is urgent need for these frameworks to be coherent and adaptable to the local socio economic circumstances to fully exploit on the opportunities geared towards building disaster resilience in the continent (Oxley, 2015).

However, DRR strategies and plans or frameworks alone are not enough in building the expected societal resilience to shocks and stresses. It is the adoption and proper implementation of these strategies that will determine their effectiveness, and how well countries and communities can progress towards the Sendai Framework targets to reduce damage and losses. The losses are envisaged through reduction in loss of lives (Target A), affected persons (Target B), economic losses (Target C) and damage to critical infrastructure and disruption of basic services (Target D). As mentioned earlier, insufficient resources, shortage of skilled personnel and poor governance are the critical factors that hinder implementation of DRR strategies and measures and achieving sustainable development in Africa (Pelling, 2006; Nyandiko, 2020). Achieving good governance in Africa is particularly challenging and is at the root of supporting development of risk-informed DRR strategies and measures. Leadership that is enlightened on disaster risks and information, which the DRR strategies and frameworks should strive to promote, inform good governance.
2. MATERIALS AND METHODS
This study assesses the progress countries are making to develop risk informed DRR strategies, policies and plans and the attendant obstacles and drivers to their development and implementation in Africa. The nature of the study necessitated use of a mixed methods approach where both qualitative and quantitative data were utilized. The overall objective of the study was to document the progress Africa is making towards achieving Target E. Data was collected through online questionnaires administered to member states focal persons during regional workshops and supplemented with interviews and documentary reviews. Further systematic review of a sample of the AU member states DRR policies and strategies complemented findings from the KIIs.

The main focus was a sample of 18 countries who are member states of the AU who have committed to submit period progress reports on the development and implementation of DRR strategies and measures in order to meet the goal of achieving Target E of Sendai Framework. The increasing frequency and intensity of large scale hazards have reinforced the drive by these countries to develop and implement the strategies and plans. Most of the countries sampled experience a wide of hazards and varying socio economic profiles. Floods are most prevalent in the Economic Community of West African States (ECOWAS) sub region, drought and floods being more prevalent in the Inter Governmental Authority on Development (IGAD), epidemics and floods are prevalent in the Economic Community of Central Africa States (ECCAS) sub region while cyclones and drought are common in the Southern Africa Development Community (SADC) sub region. The increasingly urbanizing Africa is also showing growing concentration of disaster risks (ECOWAS, 2016; IGAD, 2019; Fraser et al., 2017). These countries also diverse socio economic challenges and population dynamics suggesting that the process of development the DRR strategies or pans need to consider these peculiarities.

The questions probed examined the relevance and scope of the policies or strategies, barriers and drivers to their design and implementation. Some of the questions that were in the online questionnaire administered to the DRR focal persons are: (1) Does your country have a DRR policy/strategy? (2) Does your country have DRR legislation? (3) Does your country have legislation/policies that seek to address the global and continental DRR target to reduce disaster mortality? (4) Does your country have national legislation/policies that seek to address the global and continental DRR target to reduce the number of people affected by disasters? (5) Does your country have a local DRR strategy policy/strategy/plan? How was it developed? (6) What are the challenges to the design and implementation of the DRR strategies in your country?

Analytical framework for design and implementation of DRR strategies
The analysis of the framework for this study was guided by the Sendai Framework. Taking cognizance that a DRR framework requires strategic effort to formulate and implement, a number of critical elements are envisioned as shown in Table 1.
Table 1: Analytical framework

| Strategy aspect                  | Issue to examine                                                                                                                                                                                                 |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Understanding risk              | The extent strategy is based on comprehensive understanding of risk, underlying risk factors, connectedness and impacts. To examine such things as:                                                                 |
|                                 |   • Existence of clear goals and targets                                                                                                            |
|                                 |   • Undertaking risk assessments                                                                                                                     |
|                                 |   • Awareness creation, education, training and research to support evidence basis of the strategy                                               |
|                                 |   • Risk information and impacts                                                                                                                     |
| Governance                      | The extent there is a strong governance mechanisms to facilitate the passage of DRR strategy and its full implementation such as:                                                                             |
|                                 |   • DRR institutions established and anchored at highest level of government                                                                      |
|                                 |   • DRR staffing with adequate knowledge and skills                                                                                                  |
|                                 |   • DRR platforms for coordination                                                                                                                  |
|                                 |   • DRR parliamentary caucus for advocacy                                                                                                           |
| Financial resources             | Stable and adequate financing plan for implementing the strategy/framework:                                                                          |
|                                 |   • Clear budget lines for DRR available                                                                                                            |
|                                 |   • Risk transfer mechanisms                                                                                                                        |
|                                 |   • Risk-informed planning and development                                                                                                          |
| Technical & institutional capacities | • DRR scientific expertise and skills                                                                                                               |
|                                 |   • DRR Institutional capacities                                                                                                                     |
|                                 |   • Other existing capacities such as private sector and academia                                                                               |
| Monitoring and Reporting        | • There is an established a mechanism to monitor implementation and progress                                                                      |

The paper also benefited from review of the Bi-annual Report on the Programme of Action (PoA) for the implementation of Sendai Framework for DRR in Africa was used (2015-2018).

3. RESULTS AND DISCUSSION

The aim of this is study was to investigate the progress AU member states are making in developing and implementing national and local risk informed DRR frameworks by 2020. The Sendai Framework and the SDGs markedly recognize the importance of the national and local DRR strategies. For example, the DRR strategies are also intended to deliver on monitoring the implementation of SDGs where Target E1 is contributing to SDG Goal 1 Target 1.5; Goal 11 Target 11.5 and 11b and Goal 13 Target 13.1. Secondly, the Sendai Framework indicators are aiding to measure achievement of Target E: (1) Number of countries that adopt and implement DRR strategies, and (2) Percentage of local governments that adopt and implement local DRR strategies and plans.
3.1 Achievements in national DRR strategies and plans

The research found that 88% (44) of the fifty AU member states that responded to this questionnaire reported to have developed or developing at least a DRR framework. Majority of the DRR strategies (80%) were reported to be addressing the global and continental target of reducing the number of people affected by disasters. 93 % of the countries reported to have an institution responsible for DRR matters, whereas 62 % have DRR parliamentary caucuses (Table 2). Further analysis of a sample of DRR strategies shows that a number of the frameworks were developed before 2015 and thus assumed to be aligned to HFA and are currently being updated in line with the SFDRR requirement (Table 3). The member states also have overarching DRR legislation, action plans and other frameworks that guide the implementation of risk reduction activities such as in Nigeria, South Africa, Gambia, Ghana and Kenya.

Table 2: Achievements in DRR strategies in Africa

| Aspect                                                                 | Yes (%) |
|------------------------------------------------------------------------|---------|
| Does your country have a national DRR/DRM policy or legislation?       | 88 %    |
| Does your country have a national DRR Strategy/Plan?                   | 65 %    |
| Does your country have legislation/policies that seek to address the global and continental DRR target to reduce disaster mortality? | 79 %    |
| Does your country have legislation/policies that seek to address the global and continental DRR target to reduce the number of people affected by disasters? | 80 %    |
| Does your country have legislation/policies that seek to address the global and continental DRR target to incorporate DRR in the country’s educational systems at all levels? | 74 %    |
| Does your country have legislation/policies that seek to address the global and continental DRR target to reduce economic loss due to disasters? | 65 %    |
| Does your country have legislation/policies that seek to address the global and continental DRR target to increase funding for DRR? | 71 %    |
| Is there a government institution/s responsible for Disaster Risk Reduction/Disaster Risk management? | 93 %    |
| Does your country have a national DRR/DRM Platform?                   | 81 %    |
| Does your country have a parliamentary subcommittee dealing with DRR issues? | 62 %    |

Source: Member states reporting to the questionnaire

Further analysis of 17 DRR strategies and plans from the member states indicates that five were adopted before 2015 and therefore can be assumed to be aligned to the Hyogo Framework for Action (HFA). Thus, it can be assumed that six out of 15 policy frameworks sampled from Africa (Djibouti, Gambia, Ethiopia, Rwanda and Uganda) are yet to be aligned to the Sendai Framework since they were developed before 2015 (Table 3). Ten policy frameworks (about 65 %) have or being developed after the adoption of the Sendai Framework thus it would be assumed they are aligned though some are at drafting stage (Ghana, Sudan, South Sudan, Somalia and Tanzania are in drafting stage). The major outstanding feature of these policies or strategies if they are correctly aligned to the Sendai Framework compared to the predecessor, the Hyogo Framework for Action, is the extent they seek
to reduce existing risk, prevention of new risk, management of residual risk and building-back-better in response and recovery (UNDRR, 2015). Generally, this research demonstrates good progress is being made by AU member states towards developing policy frameworks as required by the Sendai Framework but is sluggish in a number of countries.

Table 3: Analysis of some DRR frameworks in Africa

| Country  | Name of the policy/strategy plan                                      | Status of the policy | Year of adoption/version | Implementing institution                                                                 | Type of the framework |
|----------|------------------------------------------------------------------------|----------------------|--------------------------|----------------------------------------------------------------------------------------|-----------------------|
| Burundi  | National Disaster Risk Management Policy                               | Adopted              | 2018                     | Ministry of Security and Disaster Management                                           | Policy                |
| Djibouti | National Strategy for Risk and Disaster Management (2005)             | Adopted              | 2005                     | Not determined                                                                         | Strategy              |
| Gambia   | National Disaster Management Policy                                    | Adopted              | 2005                     | National Disaster Management Agency (NDMA)                                              | Policy                |
| Ethiopia | Disaster Risk Management Policy-Ethiopia                               | Adopted              | 2013                     | National Disaster Management Commission (NDMC)                                          | Policy                |
| Ghana    | Draft National Policy on Disaster Risk Reduction                      | Draft                | 2019                     | National Disaster Management Organization (NDMO) in Ministry of Interior                | Policy                |
| Kenya    | National Disaster Risk Management Policy for Kenya                     | Adopted              | 2017                     | National Disaster Operation Centre (NDOC) in Ministry of Interior                        | Policy                |
| Madagascar | Stratégie Nationale de Gestion des Risques et des Catastrophes (2016)  | Adopted              | 2016                     | The National Council for Risk and Disaster Management (CNGRC)                         | Strategy              |
| Malawi   | National Resilience Strategy                                           | Adopted              | 2018                     | Department of Disaster Management Affairs                                               | Strategy              |
| Nigeria  | National Policy on Disaster Risk Management Policy                     | Draft                | Draft (2018)             | National Emergency Management Agency                                                    | Policy                |
| Country     | Policy Title                                           | Status       | Adopted Year | Responsible Institution                                      |
|-------------|--------------------------------------------------------|--------------|---------------|-------------------------------------------------------------|
| Rwanda      | National Disaster Management Policy                    | Adopted      | 2012          | Ministry of Disaster Management                               |
| Sudan       | Draft National Disaster Risk Management Policy          | Draft        | Draft (2018)  | Humanitarian Aid Commission (HAC)                            |
| South Africa| National Disaster Management Act                        | Adopted      | 2005          | National Disaster Management Centre                          |
| South Sudan | National Strategy for Disaster Risk Management in South Sudan | Draft        | Draft (2019) | The Ministry of Humanitarian Affairs and Disaster Management |
| Somalia     | Draft National Disaster Management policy               | Draft        | Draft (2017)  | The Ministry of Humanitarian Assistance and Disaster Management (MoHADM) |
| Tanzania    | National DRR Strategy                                  | Draft        | Draft (2018)  | Disaster Management Department in the Office of the Prime Minister |
| Uganda      | National Policy for Disaster Preparedness and Management | Adopted      | 2010          | Department for Disaster Preparedness and Response            |

DRR strategies and plans are critical tools for shaping comprehensive risk management through stand-alone or through sectoral DRR frameworks. Sectoral plans or strategies such as land use, infrastructure, health, agriculture and environmental among many others, for example, can also play a significant role to reduce risks in the sectors. Regulating land use by adopting good building codes, for example, through government sectors responsible for urban and land use planning have shown capacity to reduce disaster risk that governments need to make. They can address many disaster risks such as seismic risk or underlying disaster risks as a result of rapid urbanization and construction of buildings that do not meet safety standards in the continent (Kioko, 2014).

Interviewees reported and in congruence with Kioko (2014) that a number of non-approved buildings such as housing and public infrastructure projects have shown to pose the risk of collapse due to a variety of reasons. The factors responsible for the poor state of the construction industry in Africa include faulty design, use of poor concrete mix ratio, limited planking and strutting, too wide column spacing cost cutting by constructors and changing recommended concrete mix ratio among other reasons. Countries in the continent, for instance, can enhance resilience of the build environment by strengthening the capacity of the responsible sector to regulate and enforce the building codes and land use plans in urban areas, train artisans involved in the construction of buildings and ensure there is compliance with the required construction standards (Kioko, 2014). In agriculture sector, adopting new technologies and crop varieties that are resilient to climate variability and change and drought
can contribute to enhancing food security and resilience to sustainable development in Africa’s dry lands (Omoyo, et al., 2015). This observation raises serious concern on the extent sectoral strategies and plans are appropriately designed and implemented to complement the existing standalone DRR strategies and frameworks in the continent to support effective disaster risk reduction efforts.

In-depth analysis of the national DRR frameworks indicates most lack important elements as required by Target E of the Sendai Framework. Target E has ten elements for the two indicators on developing DRR strategies that aim to measure improvements in the existence and quality of actionable public policy on national and local disaster risk reduction strategies or legislation. The DRR strategies, among other elements, should have well defined goals and objectives across different timescales with concrete targets, indicators and clear reporting arrangements. The policy frameworks for Djibouti, Kenya, Uganda, Ethiopia and Gambia, for example, lack indicators, timeframes and reporting arrangements. Disaster risk management corrective measures are not elucidated while the activities are inclined toward disaster response. This is in congruent with the opinion of majority of the interviewees from the DRR focal points who reported that resources for risk prevention and management are not earmarked but only for response in the national budgets and in most instances they are diverted to other sectors that have higher political profile compared to DRR (Pelling and Garschagen, 2019). This raises concern on the level of risk awareness among political and decision makers in Africa despite showing commitment in the adoption of the Sendai Framework and the PoA.

Moreover, in line with the Sendai Framework, some of these strategies do not have a clear mechanism for monitoring and reporting and there is do not mention on measures for corrective risk management in the various sectors (UNISDR, 2017a). This would hamper proper monitoring in the progress the countries are making toward achieving the Sendai Framework goal, outcome and Targets. The framework documents do not recognize the sectors that are risk sensitive and vulnerable to losses such as infrastructure, livestock, agriculture, water and housing so that preventive risk reduction measures are designed. This is a clear lack of attention to priority 2 and 3 of the Sendai framework and can be attributed to limited understanding of the evolving concept of disaster risk in Africa (Wamsler & Johannessen, 2019). This was also highlighted by the respondents and emerged from analysis of literature. In overall, there are notable weaknesses in drafting these strategies as required by Target E with insufficient inclusion of the basic elements for comprehensive implementation of the risk reduction measures essential for laying the foundation for protecting citizens and economies from the impact of disasters particularly in fragile contexts (Peters, 2018).

### 3.2 Local DRR strategies and plans

The Sendai Framework requires countries to develop and implement DRR strategies and plans to support local level risk reduction measures. Interviews with respondents and analysis of literature highlight the importance of localizing DRR strategies and plans. Local DRR strategies and plans are essential to shape activities and measures that aim at reducing exposure and vulnerability to hazards to local communities where if the disasters occur are most felt and hence action is most needed. Moreover, the tools and approaches to reduce exposure and risk to these hazards are local that requires local actors and communities to engage in order to design and implement effective DRR measures (UNDRR, 2019C).
This research shows that on average 38% of AU member states have developed sub national policies and strategies. Ghana, Mali and South Africa reported the most substantial progress with all the sub national entities indicating to have developed the required DRR policies and strategies. The other member states reporting good progress are Benin (58%), Malawi (88%), Niger (88%), Sierre Leone (63%) and Zimbabwe (85%) (Supplementary material, 1). The findings show that Burkina Faso, Chad, Equatorial Guinea and Tunisia have less than 10% of their sub national authorities with DRR policies/strategies. Closer examination of the sub national policies and strategies from Kenya, Uganda and Gambia show similarity with the national DRR strategies in many fronts such as lack of indicators, timeframes and mechanisms for preventing creation of new risk and reduction of existing risk. Generally, this research finds this performance and progress through developing risk-informed local DRR strategies below average thereby calling into question the commitment by Africa political leaders and decision makers to reducing disaster risk (Kellett et al., 2014). This is contrary to the continent’s perceived obligation to the DRR agenda when they endorsed the Sendai Framework in 2015 and the subsequent adoption of the Programme of Action by AU member states for its implementation in Africa. This finding further demonstrates limited understanding of the concept of disaster risk in these instruments and majority are poorly fully aligned to the Sendai Framework.

This research concurs with Tiepolo and Braccio (2020) that revealed that most of local level DRR strategies and plans tend to overlook a number of actions. Prominent gaps found in these strategies are lack of actions to deal with small scale disasters in the community, avoidance of risk transfer mechanisms, absence of actions to address fires and lack of initiatives to manage road traffic accidents/crashes. The other missing actions in the strategies are coastal flooding as a result of sea level rise, urban flooding, collapse of buildings, absence of crop and livestock insurance, windstorms and dust storms among others. It is important to note that sub-national strategies are essential instruments for addressing such localized small scale but frequent disaster risks as they accumulate over time under the influence of hazard exposure and vulnerability and driven by the socio economic characteristics of the local area. Conducting a comprehensive hazard and risk profile of the local area should be the starting to a better understanding and development of the local DRR strategies and plans (UNDRR, 2019c). The design and implementation of policy frameworks should be undertaken in consultation with stakeholders drawn from government, private sector, civil society organizations and the vulnerable persons in the community is critical in reducing exposure of people, assets and livelihoods to the devastating impact of hazards (UNDRR, 2019).

This calls for countries in Africa to accelerate the design and implementation of local DRR strategies given that disaster risks are local phenomena and their impacts are often most intensely felt in local areas where the governments and the citizens can best engage to address them (UNDRR, 2019c).

3.3 Challenges to design and implementation of DRR strategies and plans

Analysis of the frameworks revealed that majority have elaborated mechanisms for resource mobilization to fund DRR interventions. Most of the models for mobilizing funds advocated in the DRR frameworks are falling into three main categories: (a) risk retention modalities where the ministry responsible for finance or treasury allocates standalone budget for the implementation of DRR activities such as the case in Malawi, Uganda, Ghana and Ethiopia. (b) Contingent budget where there is a dedicated budget line for disaster or emergency response and, (c) risk transfer mechanism
where the ministry responsible for finance, in liaison with the private sector or the Africa Union Risk Capacity has an insurance schemes for protection of assets and livelihoods such as crops and livestock in the event of a catastrophe (Kellett et al., 2014). Interviews with DRR focal persons cited inadequacy and unpredictability of the funds from the government as a serious impediment for effective implementation of DRR interventions. Interviewees indicated that most of funds are little, unpredictable, inclined toward disaster response, disbursed late and rarely reach the local communities where impact of disasters are felt.

The little resources dedicated for DRR are evidence of low priority accorded to DRR by decision makers and limited understanding of disaster risk in the continent (Nyandiko, 2020). In some countries where the DRR strategies show some level of inclusivity, such as South Africa, Kenya, Nigeria and Rwanda poor governance and inadequate institutional capacities is persistently hampering implementation of these strategies, thereby making them in-actionable (van Niekerk, 2020; van Niekerk, 2015). This is a contradiction to the commitment by the DRR policy and decision makers at continental level through declarations such as Tunis Declaration that was endorsed by the AU Heads of States and Governments to accelerate the implementation of DRR in a coherent and integrated manner in Africa (AU, 2018). Consequently, this results in poorly tailored strategies, policies and plans with limited impact on reducing disaster vulnerabilities and risks (Twigg, 2015). This finding suggests that it is not the number of DRR instruments that are important in the continent but the extent these strategies are enabled with adequate resources from national governments and stakeholders to support their implementation.

The extent the local DRR strategies and plans are mainstreamed into the local level planning and level of genuine engagement of the public in designing and implementing DRR measures is essential in reducing disaster risks and build societal resilience. Interviews with KIIIs and analysis of the frameworks and literature from the AU member states reveal that inadequate decentralization and localization of the DRR agenda is another challenge impeding implementation of risk reduction in the continent. Most respondents indicated that inadequate capacity of the local communities, limited understanding of disaster risks and illiteracy are hampering implementation of DRR in Africa. They stressed that local communities can engage in local DRR if they know benefits of the outcome i.e. by understanding that they are at risk from disasters and they play a role to prevent disasters from occurring at the local community (UNDRR, 2019).

This results implies that increasing awareness and knowledge on DRR to local communities and local decision makers has significant influence to accelerate the adoption of DRR in communities. Interviewees and analysis of the instruments were congruent that funding for DRR is skewed to national level in many countries in the continent such as in Uganda, Malawi, Kenya and South Africa, to name but just a few, with funds earmarked for DRR frequently diverted to other interventions that have higher political profile. They suggested DRR finance to be mainstreamed and integrated across all local sectors such as planning, fiancé, agriculture, water, energy, infrastructure, health and education to ensure sustainable and stable access to adequate funds to prevent creation of new risk and reduce existing risk in the sectors. Another critical challenge is limited provision for horizontal linkages with other local governments and communities to address transboundary risks by
harmonizing the approach to DRR within diverse local political or administrative boundaries or units (UNDRR, 2019). Despite a number of countries indicating some progress in developing the local DRR strategies and plans, these interlinked challenges suggest that plans or strategies on their own are insufficient to address disaster risks at community level.

4. CONCLUSIONS AND RECOMMENDATIONS

The study has noted there systematic commitment by most member states in development of DRR policies and strategies to support implementation of risk-informed planning. DRR policies, legal frameworks, national DRR platforms to support coordination as well as dedicated institutions for DRR are in place in most of the member states. However, some countries have yet to develop and align their DRR strategies to the SFDRR one year into the deadline of developing these national and DRR strategies. However, the research has shown that by measuring the number of national and sub-national DRR strategies is not enough but it critical to ensure these instruments incorporates the ten elements and should be appropriately aligned to the global and regional frameworks as envisaged in the Sendai Framework. Governments in Africa and partners should pay immediate attention to support develop risk inform policies and strategies and provide the necessary institutional and technical capacities for their implementation in the next ten years.

Inadequate budgetary allocation was found to be the most significant challenge impeding development and implementation of the DRR policies and strategies by governments in Africa. The research has found that the resources are inadequate, inclined toward disaster response, concentrated at national level and prone to diversion to other sectors that have more political profile. Limited technical personnel to run the various sections of the national disaster offices, weak institutional capacities, limited integration to sectors and low political economy of the DRR agenda at national and local levels are serious bottlenecks affecting their implementation. In some countries the DRR strategies/policies lack a legal framework to back up and reinforce legally the implementation of the DRR policies. The other challenges that need to be addressed include weak synergy between DRR and sectors/planning frameworks such as infrastructure, climate change and health sectors, poor understanding of DRR among the stakeholders and slow implementation of the DRR strategies and policies. It is recommended that stakeholders from development partners, NGOs and UN system should support governments in Africa to invest adequate resources to accelerate the design and implementation of DRR strategies to achieve sustainable development in the continent. Furthermore, there is urgent need to strengthen DRR Monitoring and Reporting systems in the member states to bolster and contribute to transformation of the national disaster offices to be more efficient and competent in designing and implementing risk informed strategies and plans.

Declaration of competing interest

The authors declares there is no known competing interest or relationships that would have appeared to influence production of this work.
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