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Implementing the Sendai Framework in Africa: Progress Against the Targets (2015–2018)

Dewald van Niekerk¹ · Christo Coetzee¹ · Livhuwani Nemaikonde¹

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Abstract Five years after almost all African states signed the Sendai Framework for Disaster Risk Reduction 2015–2030 (SFDRR), disasters still have a significant impact on the populations of Africa, their livelihoods, and the infrastructure on which they depend. In contrast with the period of the Hyogo Framework for Action 2005–2015, African countries not only adopted the SFDRR but also internalized the various priorities by developing an additional five targets applicable to the continent. This article takes a look at the progress made in Africa against the SFDRR and its seven targets thus far. To determine the progress, a mixed methods research approach was followed. The research found that African states are making progress, but decisive action is needed to reach the 2030 targets of the SFDRR. Much better data and information management are needed, and the limitations towards reaching the SFDRR targets must translate into community-based actions geared towards resilience building.

Keywords Africa · Disaster risk reduction · Progress · Sendai framework targets

1 Introduction

In 2015, 187 member states of the United Nations pledged their support for taking the disaster risk reduction (DRR) agenda beyond the Hyogo Framework for Action

2005–2015 (HFA) (UNISDR 2005). This translated into adopting the Sendai Framework for Disaster Risk Reduction 2015–2030 (SFDRR) (UNISDR 2015) that aims to build on the successes of the HFA, with a particular emphasis on resilience (Manyena 2016). In this post-2015 era two other significant international agreements were reached: the Sustainable Development Goals (SDGs) (United Nations 2015b) and the Paris Agreement on Climate Change (United Nations 2015a). Concerted efforts were made to ensure these agreements are mutually reinforcing and that the integration of DRR, biodiversity and conservation, climate change adaptation, sustainable development, and humanitarian goals, become more practical.

On the African continent, all 55 African countries signed up for the Sendai Framework (Manyena 2016). The African countries, under the leadership of the Africa Union (AU), identified five additional targets that are needed for African states to realize the ideals of the SFDRR. To this end, the Programme of Action for the Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030 in Africa (PoA) was adopted (AUC 2016). The PoA provides guidance and direction for actions to prevent and reduce the risk of disasters, and to promote resilience for all at the continental, regional, national, and subnational/local levels in Africa in line with the Sendai Framework (AUC 2016). To consolidate and accelerate the implementation of the Programme of Action, ministers and heads of delegations responsible for DRR in Africa adopted the *Tunis Declaration on Accelerating the Implementation of the Sendai Framework for Disaster Risk Reduction and the Africa Regional Strategy for Disaster Risk Reduction* (AU 2018) at the Africa-Arab Platform on Disaster Risk Reduction in October 2018. With institutions, organizations, and policy and legislative frameworks for DRR put

✉ Dewald van Niekerk
dewald.vanniekerk@nwu.ac.za

¹ Unit for Environmental Sciences and Management, Africa Centre for Disaster Studies, North-West University, Potchefstroom 2522, South Africa

in place, countries on the African continent are progressively moving towards achieving the ideas of the Sendai Framework. This article reviews the progress that has been made in Africa against the seven targets of the SFDRR for the period 2015–2018.

2 The Sendai Framework in Africa

Even with the adoption and implementation of both the SFDRR and the PoA, albeit slow, disaster incidences on the African continent, and their impacts in terms of number of people affected and economic losses, have increased since 2015 (EM-DAT 2019). Within the first 5 years of the adoption of the SFDRR, droughts, floods, cyclones, landslides, tornados, epidemics, and wildfires have all to varying degrees affected different regions of the African continent. Cyclones Idai and Kenneth that hit the Southern African region in March 2019, affecting Mozambique, Malawi, and Zimbabwe, are typical examples of vulnerability driving disasters on the African continent. Over 2.2 million people were affected and approximately 1300 fatalities were recorded due to impacts of the two cyclones (Pelling and Garschagen 2019; Weems 2019). In 2017, a mudslide in the outskirts of Freetown, Sierra Leone killed over 1100 people with 6000 people affected (Cui et al. 2019). Droughts continue to persist in the Southern African region, resulting in food shortages in some countries. Volatile vulnerability conditions, rooted in extreme poverty and underdevelopment, create Africa's high disaster risk profile (Van Niekerk 2015).

With the adoption of the Hyogo Framework in 2005, many African states institutionalized DRR, moving from traditional civil protection and emergency response to DRR and disaster risk management (DRM) in the context of appropriate planning, with an emphasis on sustainable recovery linked to development (Van Niekerk and Wisner 2014). As Manyena (2016) argued, the Sendai Framework provides an opportunity to address chronic and potential disaster risks, as well as to protect development gains for Africa. The SFDRR encourages countries and regions to better understand the multiple risks to which they are exposed (Mysiak et al. 2016). Most importantly, the SFDRR presents opportunities for the framing of regional and national policies on DRR (Pearson and Pelling 2015).

The SFDRR as a non-legally binding framework (UNISDR 2015), provides comprehensive guidance to governments, and also other organizations, nongovernmental organizations (NGOs), the private sector, local authorities, and academic institutions, in their efforts to reduce risk related to natural hazards (Briceño 2015). The framework underscores the importance of broad-based collaboration among governments, with the private sector

and other stakeholders, reaching beyond the traditional DRR community (Munene et al. 2018). Whereas the framework encourages contribution from all stakeholders and all levels for the achievement of the outcome of the framework, it places the primary responsibility of reducing disaster risk on the member states (Munene et al. 2018). As Clarke et al. (2018) reflected, the SFDRR offers national governments an opportunity to enhance their capacities to deal with disaster risk at all scales and across all sectors.

The achievement of the stated outcome of the Sendai Framework—"substantial reduction of 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" (UNISDR 2015, p. 6), will be measured in Africa against the seven targets of the SFDRR and the five targets of the PoA. With these twelve targets, the PoA is intended to guide the advancement of the DRR agenda on the continent, in coherence with sustainable development, climate change, conflict resolution, and other related actions for resilience building (AUC 2019). The seven Sendai Framework targets (UNISDR 2015) that member states should aim to achieve are:

- a) Substantially reduce global disaster mortality by 2030, aiming to lower the average per 100,000 global mortality rate in the decade 2020–2030 compared to the period 2005–2015;
- b) Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 in the decade 2020–2030 compared to the period 2005–2015;
- c) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030;
- d) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030;
- e) Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020;
- f) Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this Framework by 2030; and
- g) Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.

In addition to achieving the above targets as set out in the Sendai Framework, African countries agreed to develop data by 2020 to measure progress in achieving the following additional targets:

- (1) Substantially increase the number of countries with DRR in their educational systems at all levels, as both stand-alone curriculum and integrated into different curricula;
- (2) Increase integration of DRR in regional and national sustainable development, and climate change adaptation frameworks, mechanisms, and processes;
- (3) Substantially expand the scope and increase the number of sources for domestic financing in DRR;
- (4) Increase the number of countries with, and periodically testing, risk-informed preparedness plans, and, response, and post-disaster recovery and reconstruction mechanisms; and
- (5) Substantially increase the number of regional networks or partnerships for knowledge management and capacity development, including specialized regional centers and networks.

The enthusiasm and eagerness for the implementation of the SFDRR on the African continent is reflected by the African Union's adoption of the Programme of Action for the implementation of the Sendai Framework. Most importantly, the implementation of the SFDRR in Africa is subject to the Constitutive Act of the African Union (AU 2000), which provides the basis for all policies, strategies, and programs, and all actions of the African Union. For the implementation of the SFDRR, the AU has designated the Regional Economic Communities (RECs) as the main implementation mechanisms, with the responsibility of providing strategic guidance to their member states through developing and implementing subregional DRR strategies and coordinating interstate DRR initiatives (Orago 2019). In 2018, the Southern African Development Community (SADC), for example, developed a Disaster Risk Reduction Strategic Plan and Plan of Action 2018–2030, which is in line with the PoA and the SFDRR. In addition, SADC developed a Regional Strategic Resilience Framework in 2019, which is aligned with and builds on this DRR Strategic Plan.

However, Manyena (2016) argued that for Africa to effectively implement the SFDRR, it needs to build its own technical capacity using its own resources. Manyena (2016) further questioned whether the Western perspective of the SFDRR is consistent with the conceptual world views of the African continent. Olowu (2010) observed that, regrettably, most African states hardly move beyond the scope of formal commitment to declarations and high-level meetings. Compliance with the commitments remains problematic. To investigate this phenomenon a research intervention was implemented targeting all of the AU member states.

3 Methodology

The study used a mixed methods approach. First, an assessment of the relevant literature was undertaken to provide a qualitative critique of the Sendai Framework and its implementation in Africa. Second, qualitative and quantitative data from the AUC, the RECs, and African countries on the various targets of the SFDRR were collected. Two periods (2015–2016 and 2017–2018) were used for comparison purposes. Data from the Sendai Framework Monitor,¹ EM-DAT,² and the INFORM³ databases were extracted for baseline information on the Sendai Framework targets. Data from the INFORM database for the years 2015–2018, and Hyogo Framework reporting up until 2015 were used. For disaster losses the data from EM-DAT (2019) were used and supplemented and validated by the African countries. The primary data collection instrument was regional data gathering workshops, which were held from July to September 2019. Four workshops were held with countries in four regions. They were grouped as follows (Fig. 1): Intergovernmental Authority on Development (IGAD) and East African Community (EAC); Southern African Development Community (SADC); Economic Community of West African States (ECOWAS); Economic Community of Central African States (ECCAS) and North Africa (which included the Arab Maghreb Union (UMA), Egypt, and the Sahrawi Arab Democratic Republic). Forty African countries (72%) participated in the data collection workshops. However, in total 50 African countries (91%) provided data (Cabo Verde, Cote d'Ivoire, Eritrea, Libya, and Saharawi Arab Democratic Republic did not provide data).

Three different data collection tools were used during these workshops. First, countries were supplied with a template of the various data points relating to the seven targets of the SFDRR. The template was disseminated prior to the workshops and Sendai Framework monitoring focal persons were encouraged to consult with their national

¹ See <https://sendaimonitor.unisdr.org>.

² Also known as the International Disaster Database maintained by the Centre for Research on the Epidemiology of Disasters—CRED.

³ INFORM is a collaboration of the Inter-Agency Standing Committee Reference Group on Risk, Early Warning and Preparedness and the European Commission. The European Commission Joint Research Centre is the technical lead of INFORM. The INFORM model is based on risk concepts published in scientific literature and envisages three dimensions of risk: hazards and exposure, vulnerability, and lack of coping capacity dimensions. INFORM uses 25 different international databases for its various indicators. Some include the Agriculture Stress Index Probability of the UN Food and Agriculture Organization (FAO), personal remittances received (% of GDP) by the World Bank, international humanitarian aid by the Financial Tracking Service of the UN Office for Coordination of Humanitarian Affairs (OCHA), and the Conflict Barometer—HIIK by the Heidelberg Institute for International Conflict Research.

Fig. 1 Surveied Regional Economic Communities of Africa. *UMA* Arab Maghreb Union, *IGAD* Intergovernmental Authority on Development, *EAC* East African Community, *SADC* Southern African Development Community, *ECCAS* Economic Community of Central African States, *ECOWAS* Economic Community of West African States

DRR platforms and statistical services in compiling the report. During the workshops an online survey was used for further data gathering, data validation, and triangulation. Qualitative and quantitative responses were elicited to allow each country to give more in-depth, context-specific comments and motivation to their progress against each target. Countries that could not attend the workshops were given time to complete the survey and submit their responses online. Forty-seven countries completed the online survey and an additional three countries provided data through email correspondence. All data were aggregated to Regional Economic Community level for further analysis. The qualitative data were categorized, analyzed, and interpreted according to the various targets of the SFDRR.

4 Critique of the Sendai Framework in Africa

Considering the continued impact of disasters on the lives, livelihoods, economies, and infrastructure of many African states, it seems an academic expedience to raise a critique against international policies such as the SFDRR. After all, these policies aim to address the adverse impacts of disasters and improve levels of disaster resilience in society at large (Guadagno 2016; Reifels et al. 2018). However, a critical review is necessary in view of the historic failures of global DRR policies in bringing about significant reductions in the economic and human impacts of disasters over the last 20 years (Cardona 2013; UNISDR 2015). A critical review of these policies is also necessary if we are to move towards policies that are relevant to, and cognizant of, ever-changing policy environments, as this could contribute to their successful implementation (Mysiak et al. 2016).

This critique is directed not so much at the content of the SFDRR, which contains goals, targets, and priorities for action, which could contribute to reducing risk and

generating disaster resilience. Instead, the critique focuses on how realistic the pursuit of these goals, targets, and priorities are within the challenging developmental and governance context in many African states, something that is not always taken into account when these policies are formulated. This critique is supported by Oxley (2015, p. 6) who stated that “the Sendai Framework lacks appropriateness in contexts of complexity, uncertainty, informality, fragility, insecurity (including conflict).” It is well accepted for governance that governments and their developmental policies are shaped by contextually unique historic, socioeconomic, and environmental factors (Hartvigsen et al. 1998; Begun et al. 2003; Holden 2005; Boal and Schultz 2007; Zhou et al. 2010). Within a governance context these contextual factors will uniquely influence the ability of nations or regions to realistically achieve the outcomes and goals of the global policies they ratify. African states have faced challenges relating to the insufficient institutionalization of DRR, political will, lack of funding, and shortages of human resources to carry out DRR activities (Botha and Van Niekerk 2013; Hagelsteen and Becker 2013; Malalgoda et al. 2014). In these instances, the contextual governance challenges that are present make the achievement of policy goals and objectives unlikely, especially in the relatively short lifespan of the SFDRR (2015–2030). One such instance can be described in the execution of Priority 1: Understanding disaster risk. This can be considered as a foundational goal of the SFDRR as it emphasizes the need to conduct risk assessment and collection of data that will inform DRR and resilience building efforts. Unfortunately, the data collection and management problems hampering the achievement of this foundational priority for action are vast throughout the continent.

Another critique of both the SFDRR and the PoA is the primary role given to national governments in ensuring the achievement of goals, targets, and priorities set out in both documents. A part of the rationale of both the SFDRR and the PoA seems to be the assumption that if disaster risk governance is strengthened at a national level, good governance for DRR will cascade down to the local government level. Although in principle this seems to be a completely rational point of view, it does not always translate into practice (Pearson and Pelling 2015; Jones et al. 2017). An example is South Africa, which has some of the most extensive DRR governance structures and policies in Africa, and the world (Pelling and Holloway 2006). However, the quality of the DRR governance structures becomes progressively more dysfunctional, with key structures not being established and severe human resource shortages at the subnational and local governance levels (Botha and Van Niekerk 2013; Van Niekerk 2015). By measuring the progress of DRR governance at a

national level the SFDRR may generate a false sense of progress in improving disaster risk governance, and could hide more serious shortcomings in disaster risk governance at local government levels where disasters have the biggest impacts.

This focus on national government as the main driver of the achievement of the SFDRR and PoA targets and goals could also reinforce existing top-down approaches to DRM activities that prevail in many African states. Although it should be mentioned that both the SFDRR and the PoA emphasize the importance of community participation, it does seem to be a case of community participation as regulated by national agencies, donors, and international policy, rather than sincere calls for community participation. De La Poterie and Baudoin (2015) commented that the SFDRR constitutes a dramatic departure away from meaningful partnerships for DRR with local actors to a more top-down advocacy for the activities of national-level role players. The PoA seems to reinforce this orientation by imploring that “Civil Society Organizations (CSOs), including Non-Governmental Organizations (NGOs), women-led community-based organizations (CBOs), children and youth, and the private sector, other partners and stakeholders, are encouraged to align their DRR strategies and programmes to the PoA to ensure coherence of DRR in Africa” (AUC 2016, p. 6). By avoiding giving communities and community organizations a more meaningful role in directing and constantly adapting DRR policy and programs, the Sendai Framework could miss the opportunity to generate the desired progress towards global disaster resilience (Oxley 2015). To determine the progress of the above, one can thus assume that the targets of the SFDRR will give some guidance as to the successful implementation of DRR at the country level.

5 Findings

The research found that SFDRR Targets (a)–(c) were those most readily reported on by countries. This correlates with the data of the Sendai Framework Monitor (UNDRR 2019). Table 1 provides a breakdown of the disaster and economic losses recorded for the period 2015–2018, by Regional Economic Community. Deaths, Target (a), and the number of people affected, Target (b), are expressed per 100,000 of population.

5.1 Sendai Framework Target (a): Reduce Continental Disaster Mortality

There has been an overall increase in reported disaster mortality for the period 2015–2016 to 2017–2018 from 31,710 to 36,287 (13% increase or 0.34 per 100,000 of

Table 1 Disasters and losses, by African Regional Economic Community (REC), 2015–2018

REC	No. of recorded disaster events		No. of deaths (SFDRR target (a) (per 100,000 of Population)		No. of affected (SFDRR target (b)) (per 100,000 of Population)		Direct economic loss (1000 US\$) (SFDRR Target (c))	
	2015–2016	2017–2018	2015–2016	2017–2018	2015–2016	2017–2018	2015–2016	2017–2018
IGAD/EAC	39	40	0.57	1.3	7967.78	373.84	1,873 700	483,600
ECCAS	45	68	9.8	8.09	1647.59	2885.96	379,798	280,833
North Africa	112	258	2.3	4.29	394.85	3132.33	20,017	36,000
SADC	84	80	4.06	5.22	7513.25	2579.98	492,515	2,536,612
ECOWAS	31	28	0.54	0.63	905.73	1377.39	69,100	4,807,094
Total	311	474	2.36	2.7	4380.83	1712.56	2,835,130	8,144,139

Source Countries reporting on the SFDRR and PoA; EM-DAT (2019)

IGAD Intergovernmental Authority on Development, EAC East African Community, ECCAS Economic Community of Central African States, SADC Southern African Development Community, ECOWAS Economic Community of West African States

population). This is due to a number of significant events in Africa ranging from the Ebola outbreak in West Africa, to mud- and landslides in Sierra Leone in 2017. The southern and eastern regions experienced a strong El Niño with flood losses. The North Africa, SADC, and ECOWAS regions all showed an increase in mortalities, with a decrease in the IGAD/EAC and ECCAS regions. The increase in the SADC and North Africa is largely due to more reported transportation and industrial disasters. In total there has been a slight increase in reported disaster mortalities between 2015–2016 and 2017–2018 in these regions. In the IGAD region, Sudan recorded the highest number of disaster mortalities over the period, which is associated with an outbreak of cholera in 2017, mostly in refugee camps. The majority of reported disaster mortalities in 2015–2016 were caused by anthropogenic hazards—mostly transportation and industrial disasters. In terms of natural hazards, biological and hydrometeorological disasters caused the most deaths. Droughts had a significant impact on almost all regions, but deaths due to drought were not accurately recorded by countries and this skews the figure of overall disaster mortalities.

5.2 Sendai Framework Target (b): Reduce the Number of Affected People

There has been a significant decrease (39%) in the number of people affected by disasters from 2015–2016 (58,755,654 or 4381 per 100,000 of population) to 2017–2018 (22,968,932 or 1713 per 100,000 of population). The IGAD/EAC (− 95%) and SADC (− 66%) regions recorded the most decreases in affected populations over these periods. However, in the ECCAS region there was a 57% increase in affected populations, an increase of 35% in the ECOWAS region, and 88% in North Africa.

The number of affected populations can be ascribed to the strong El Niño in the southern and eastern regions in 2015–2016, which is related to droughts and floods in South and East Africa. Droughts have affected by far the most people on the continent, followed by floods. Storms and extreme temperatures showed a sharp increase from 2015–2016 to 2017–2018. As with disaster mortalities, there seems to be limited coordination among the different actors in recording the number of people affected by the various disasters, especially drought.

5.3 Sendai Framework Target (c): Reduce Direct Disaster Economic Loss

The research showed a 34% increase in reported direct economic losses in Africa between 2015 and 2018. However, the IGAD/EAC and ECCAS regions showed a decrease in economic losses. There has been a slight increase in North Africa but a significant increase in the SADC and ECOWAS regions. Most of the disaster losses were due to the impacts of the droughts and floods, although flood losses were the most reported. Storms also caused huge economic losses and there was a significant increase in the losses in the SADC due to wildfire incidents in South Africa in 2017 (most of the losses were due to the Knysna fires in South Africa that affected high-income properties/areas, which were mostly insured losses) (Le Roux and Van Niekerk 2019).

5.4 Sendai Framework Target (d): Reduce Disaster Damage to Critical Infrastructure and Disruption of Basic Services

Reporting by countries on the damage to critical infrastructure and disruption of basic services remains a

challenge. Data is mostly available or quantified only at national levels, while most of the losses are sustained at local levels. With the available data, countries reported a significant increase in damage from 2015 to 2016 (128%). From 2016 to 2017 there was a reported decrease of 24%, and from 2017 to 2018 there was a 58% increase (UNDRR 2019). Despite the increase in damage reported, the number of losses is less between the comparative periods 2015–2016 to 2017–2018.

5.5 Sendai Framework Target (e): Increase the Number of Countries with National and Sub-National/Local Disaster Risk Reduction Strategies

The number of countries with DRR strategies in Africa has increased by 22% since 2015. Most of the post-2000 policies and strategies are aligned with the Hyogo Framework, with an increasing number aligned with the Sendai Framework. Countries reported that policies and strategies that are being updated are aligned with the SFDRR and the PoA. Few countries have policies and strategies dating before the 1990s, and in such cases, most of these are being revised. Although there has been an increase in the development and promulgation of national DRR policies, strategies, and plans, the actual implementation throughout various levels of government remains problematic. Only 4% of countries reported that their DRR strategies are fully implemented (interventions exist that address all the objectives/priority areas of the strategy/plan). The majority (77%) indicated that their policies and strategies have been partially implemented and 18% reported no implementation at all (Table 2).

Numerous international cooperating partners such as the World Bank (WB), European Union (EU), African Development Bank (AfDB), United Nations Office for Disaster Risk Reduction (UNDRR), United Nations Development Programme (UNDP), Global Facility for Disaster Risk Reduction (GFDRR), International Federation of Red Cross and Red Crescent Societies (IFRC), World Food Programme (WFP), United States Agency for International Development (USAID), and Food and Agriculture Organisation (FAO) (to name but a few) have greatly contributed towards supporting countries to develop these policies and strategies. Djibouti, Democratic Republic of the Congo, Somalia, Sudan, Guinea-Bissau, Liberia, Niger, Senegal, Cameroon, Congo, Equatorial Guinea, and Gabon do not currently have any DRR strategies in place. At the subnational level a number of countries reported the existence of DRR strategies and plans. Most of the local-level entities with DRR strategies in place are urban centers, with rural municipalities lagging behind. On average only 38% of the reported subnational entities in Africa have DRR strategies and plans in place. However, this figure relates to the 21 countries that reported on this target.

5.6 Sendai Framework Target (f): Enhance International Cooperation

Countries reported an increase in international cooperation and funding. In the period 2015–2016 countries reported an average of 53% increase in such cooperation. Of specific importance is the role played by the WB, the EU, as well as the AfDB in supporting countries in their DRR efforts. In some examples, Burkina Faso highlighted the role and

Table 2 African member states' progress: Sendai Framework Target (e)

Disaster risk governance aspect	Percentage of countries (%)
Countries with national DRR/DRM policy or legislation	88
Countries with national DRR Strategy/Plan	65
Countries with legislation/policies that seek to address the global and continental DRR target to reduce disaster mortality	79
Countries with legislation/policies that seek to address the global and continental DRR target to reduce the number of people affected by disasters	80
Countries with 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
Countries with legislation/policies that seek to address the global and continental DRR target to reduce economic loss due to disasters	65
Countries with legislation/policies that seek to address the global and continental DRR target to increase funding for DRR	71
Presence of government institution(s) responsible for DRR/DRM	94
Countries with a national DRR/DRM Platform	81
Countries with a parliamentary subcommittee dealing with DRR issues	62

Source Countries reporting on the Sendai Framework and the African Programme of Action

support by ECOWAS in capacity development for DRR. Mention was made of the Global Environment Facility (GEF) and its support towards the integration of DRR and climate change adaptation aspects in this country. Benin reported on the interstate cooperation in DRR it has with Cameroon, Morocco, and Togo. Cote d'Ivoire highlighted the cooperation and support by ECOWAS, UNDP, UNDRR, the WB, and the EU, for information management, awareness creation, and capacity development. The Norwegian Government also supports Ghana via funding and technical assistance. Liberia reported the involvement by the Japan International Cooperation Agency (JICA), which supports the four priority areas of the SFDRR and the PoA. The JICA promotes the mainstreaming of DRR in every developmental project and supported the development of a framework for DRR. Sierra Leone is currently undergoing significant and profound changes in their national DRM structures with the support of the WB, the UK Department for International Development (DFID), and UNDP. Emphasis in this cooperation is placed on the creation of a new DRR Agency (a draft bill has already been developed), a recovery program, the multi-hazard assessment for resilient cities, the compilation of a national hazard profile, and the implementation of school programs and ensuring public education.

An example of subnational cooperation was given by Botswana. It has a capacity enhancement cooperation program with North Carolina, United States. This program not only enhances skills but also provides equipment for search and rescue and an Emergency Operations Centre. Eswatini (formerly Swaziland) has agreements with Taiwan, China that provide in-kind support, and a proposal to the WB is in the negotiation phase. Malawi reported on a significant number of international cooperation initiatives. One such agreement is a trilateral cooperation between China, Malawi, and UNDP that was in place from 2016 to 2017. The Seychelles highlighted the technical assistance provided to them by the WB for the development of its National Integrated Emergency Management Plan. Various cooperations with regional bodies were also mentioned such as the SADC Regional Vulnerability Assessment and Analysis program, which has assisted greatly in the subnational integration of vulnerability measures into development planning. Algeria has developed several international cooperation initiatives in DRR, mainly in capacity building, with UNDP, France, Italy, Japan, and China. Morocco developed international relations with JICA (Japan), Switzerland, as well as the Organisation for Economic Co-operation and Development (OECD), while Tunisia has cooperation with UNDRR, UNDP, and the EU (DG ECHO—Directorate-General for European Civil Protection and Humanitarian Aid Operations) in order to

develop their national strategy on DRR and the plan of action.

5.7 Sendai Framework Target (g): Increase the Availability of and Access to Multi-Hazard Early Warning Systems

There does not seem to be significant progress on this target over the periods in question and most countries reported on existing early warning systems (EWSs) that were in place prior to 2015. Eighty-two percent of countries reported that they have some form of multi-hazard early warning system(s) (MHEWS) in place. Challenges identified relate to the lack of systems integration, multiple early warning systems at various levels and in different sectors that are not coordinated, and national sovereignty issues in relation to cross-border early warnings and systems (also see Marchezini 2020). In general, the number of early warning systems has increased since 2015.

6 Discussion

The quantitative and qualitative data suggest that, in general, the countries of Africa are making progress towards achieving the targets of the SFDRR. There are, however, a number of anomalies that need to be highlighted. One should note that the analysis of the disaster mortalities for this research only covered a 4-year period (2015–2018). In terms of Target (a), countries do not readily attribute deaths to a specific drought disaster or the knock-on effects of droughts (for example, food insecurity, epidemics, health problems). Consequently, deaths due to drought are not well reported. Much better reporting on drought-related mortalities is thus needed.

The losses reported for Target (b) are a very small percentage over, for instance, a 10–20-year period (EM-DAT 2019). Although the losses declined, one big disaster in any given year will significantly influence the analysis (as will be the case for 2019, with two significant cyclone events over southern Africa). The challenge with this indicator is to obtain as accurate as possible data from countries and other partner organizations. It is imperative for the African Regional Economic Communities, with the assistance of international cooperating partners and countries, to establish mechanisms for the recording of these statistics. Although the losses in South Africa were high in relation to the other recorded losses in the SADC region, it is important to note that it did not have any recorded significant impact on the South African economy. This is largely due to its strength, and the presence of public and private insurance mechanisms. No direct economic losses were recorded by any country in relation to transportation

and industrial disasters. However, the heightened increase in these incidents on the continent over the past 4 years warrants a question as to the economic losses associated with such incidents. The lack of data on these disasters shows a lack of coordination between national DRM structures and other sectors, such as transportation. Similarly, the economic losses due to epidemics are poorly defined and reported on (if at all).

One of the challenges identified in the reporting on Target (c) is the delineation of what constitutes direct economic loss across sectors. Although the SFDRR provides adequate guidance on this target, countries expressed difficulties in obtaining complete data. Disasters (such as droughts, epidemics, and transportation crashes) do not allow for the one-off recording of massive losses due to the time frames linked to such events. These losses are more associated with the aggregate loss linked to a number of disasters over a period of time. Less direct losses but more monetary loss was reported. Direct disaster losses are therefore poorly recorded by countries and RECs. Better coordinating mechanisms must be put in place and it is suggested that countries and their respective RECs make concerted efforts to establish linkages with their national research institutions, universities, and statistical services, which can play a valuable role in gathering and managing such data on an ongoing basis.

Reporting damages to critical infrastructure and disruption of basic services, Target (d), proved to be challenging. Data recorded by countries only related to the number of facilities destroyed or damaged. Very little other data on such losses are recorded, for example: number of school days lost; impact on supply chains and other business opportunities; or additional deaths and affected people through the loss of health facilities. Although it is useful to record the number of critical infrastructure losses, it is recommended that countries also draw correlations with the direct and indirect economic losses related to Target (c) of the SFDRR.

In terms of Target (e), the lack of implementation of the national policies at the national (cross-sectoral coordination and buy-in) and subnational levels, as well as funding support for the implementation of the policies and strategies, greatly affects the achievement of this target. The RECs should make concerted efforts to support countries that do not have national policies, laws, and strategies for DRR in place yet (see also the relevance of international law as described by Aronsson-Storrier 2020). It is recommended that funding streams are created for tracking the funds that are allocated to DRR policy and strategy implementation at all levels of government and that this is reported annually.

From the reporting on Target (f), it is clear that significant bi- and multilateral cooperation for DRR exists on the

continent. However, cooperation can also be problematic. One of the challenges mentioned by countries is that funding comes with certain conditions from donors. Such conditions do not always fully align with the national priorities, and countries indicated that they need to adhere to these conditions if funding is to be secured. Countries highlighted the need for continued cooperation but felt that this target can have a negative focus in assuming that “developing” countries are always in need of assistance. Emphasis was placed on the existence of local technical skills, which can be much better utilized if funding is available. A distinction should thus be drawn between monetary and technical assistance.

In terms of multi-hazard early warning systems, Target (g), it is clear that countries’ meteorological and hydrological services seem to be the greatest sources of early warning information. Countries reported an increase in the development and implementation of MHEWS. Most countries reported on the existence of two or more such systems. These systems are, however, very sector specific. Concerns were raised on the lack of integration of such systems, and most countries believed that RECs need to play a leading role in ensuring synergies in MHEWS and regional warnings. The main challenge for this indicator is that most countries have a number of single-hazard focused warning systems, with very little integration. Poor coordination at national and regional level hinders effective MHEWS. The lack of meteorological data capture platforms or networks could also contribute to less effective early warning systems at national levels. It is suggested that the Africa Union Commission, through the RECs, implement measures aimed at better use and integration of early warning systems (see also Marchezini 2020). Data on the accessibility of these systems by the broader public is limited. Communication processes must be put in place to adequately communicate early warning information to those most in need of such information. In achieving Target (g), countries will need to substantially increase the availability of and access to MHEWS and disaster risk information by 2030. It is recommended that RECs play a much more leading role in promoting, assisting, and enhancing regional MHEWS among countries, cognizant of the necessity of sovereign national warnings.

7 Conclusion

This article provides an assessment of the changes in achieving the targets of the SFDRR on the African continent over the period 2015–2018. Using a mixed methods approach the research set out to collect the needed baseline data by consulting prominent disaster databases and augmenting them with data collection workshops involving

representatives from the AUC, RECs, and African countries. These data collection interventions aimed to reveal comparative data for the periods 2015–2016 and 2017–2018. As has been seen with the Hyogo Framework, 10 years in the DRR domain is a very short period. Thus, the remaining 10 years of the Sendai Framework need to be approached earnestly by all African states if the targets are to be achieved. Biennial reporting on the progress towards the goals of the SFDRR and PoA is a requirement until 2030, and it is clear from the research conducted and the interactions with Africa member states, that reporting on the SFDRR and PoA in Africa is a priority.

Weak information management and sharing will continue to hinder this process if not adequately addressed. Concerted efforts by countries in actively collecting, analyzing, and storing data are needed for refined reporting on the various targets. African countries must be encouraged to use existing available tools like the Sendai Framework Monitor and Desinventar⁴ databases for ease of reporting. Integrated efforts nationally and regionally are needed to address common and shared disaster risk profiles. The involvement of the various RECs as well as the AUC in this regard has already proven successful. Caution should also be expressed with respect to the possible overemphasis on biennial reporting, forgetting that actions for resilience building are needed to achieve the very targets that must be reported on. African countries will do well to utilize the results of the first biennial report to guide policy adaptation, and direct funding for actions at the front line.

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⁴ See <https://www.desinventar.net> for more information.

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