RISK-INFORMED URBAN DEVELOPMENT:

LESSONS LEARNED FROM THE URBAN SECTOR IN WHICH MEASURES BASED ON THE GUIDING PRINCIPLE OF RID HAVE BEEN IMPLEMENTED AT THE NATIONAL AND/OR SUBNATIONAL LEVEL OF SADC

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GI:DRM
Global Initiative on Disaster Risk Management

Statement of Purpose

Development is taking place in a complex and uncertain environment of risks – at the same time current development pathways are creating risk faster than we can manage risk. Risk needs to be understood as being interdependent and systemic. Disaster risk reduction is not enough – we need to transform our development pathways to risk-informed development. Building capacities and promoting an enabling environment to make decisions risk-informed is key. Fostering the participation of all members of society and systemically addressing inequalities are cornerstones of risk-informed development. There is no universal blueprint – risk-informed development needs to be tailored to the context with sufficient flexibility to re-evaluate and adapt continuously. Risk-informed decision-making is a prerequisite for sustainable development and fundamental to preventing the creation of risk. Based the integration of Risk-informed Development-Based (RID) processes at the SADC national and/or subnational levels and in conjunction with other German technical cooperation projects; this report synthesizes the lessons learned drawn from the urban sector. The report provides a summary of the lessons learned for RIUD under five main clusters namely: 1) Legal & organizational setups; 2) Programmatic and actionable setups; 3) Budget & Funding; 4) Risk Assessment & Mitigation options and; 5) Data & Information flows and presents ad series of recommendations for further exchange and consideration. An overview of expert input and still online accessible sessions along the LEP and the Making Cities Resilient 2030 Roadmap (MCR2030) is provided.

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1. Background

Africa's cities face exponential growth with unplanned urbanization trends and unfolding vulnerabilities threatening to undo SADC's urban development gains and increasing inequality thereby the exposure of majority of the population to disaster risks and ultimately their vulnerability to disasters. The rapid urban transformation has meant that African cities have seen an exponential urban population growth from approximately 70 million in 1970 to 294 million in 2010 and is projected to reach 621 million by 2030 and, will almost double to 1.2 billion by 2050. This trend can also be observed in the region represented by the SADC. In fact, SADC's 16 Member States are among the world's fastest urbanizing countries. Unprecedented urbanisation is arguably the most significant transformation that African countries will experience this century, and which presents both challenges and opportunities, inclusive of the rise of urban disaster risk. Despite Africa's low contribution to GHG emissions, the continent remains the most vulnerable to hazards and risk drivers like climate change and climate variability. The significantly large urban population and future projections directly correlate to the exposure and experience of disaster losses. Due to a lack of local capacity and financial means to manage this rapid urban growth, much of the urban expansion has

been taking place outside or in the absence of formal planning frameworks compliant with domestic ordinances and by-laws. Urban sprawl is a common experience among settlements across the continent, characterized by the creation of high vulnerability thereby high disaster risk due to poor living conditions with a lack of basic and social services. While Disaster Risk Reduction (DRR) has become an important topic on the SADC agenda, research reveal that the urban dimension of risks is still insufficiently reflected in the overall package of institutional, organizational competences and capacities throughout the SADC, its Member States (MS) and the Local Governments.

This is *inter alia*, due to the fact that while development is taking place in a complex and uncertain environment of risks – at the same time current development pathways are creating risk faster than we can manage risk. What is not yet adequately in place is that risk is understood as being interdependent and systemic, enabling to transform our development pathways to risk-informed development. Building capacities and promoting an enabling environment to make decisions risk-informed is key and has to be embraced. Without a universal blueprint – it is clear that risk-informed development needs to be tailored to the context with sufficient flexibility to re-evaluate and adapt continuously.

While the SADC Secretariat has produced the SADC Regional Resilience Framework 2020–2030 which focuses mainly on priorities like “Robust and Connected Infrastructure” and “Sustainable Urban Centres”, placing particular attention to the respective objectives of understanding the linkages between infrastructures, their interdependencies, and possible failure mechanisms as well as supporting the adoption of resilience in urban planning and integration of nature-based solutions into urban planning and development remain largely to be further unpacked.

2. The learning process on risk-informed urban development

Continued capacity building at local level, requires embedding and ensuring increased knowledge and understanding of fundamental concepts relating to DRR as well as how to assess resilience gaps and recognize existing resilience practices. The “Mid-course correction from the local authority and urban practitioner perspectives on risk reduction since 2015” includes ways to accelerate progress in implementing the Sendai Framework for Disaster Reduction at the local level (UNDRR 2022), highlighting the urgent need to: a) strengthen capacities to reduce urban vulnerability and building resilience, b) to enable peer to peer learning, share knowledge, lessons learned and good practices at the forefront of prevention, preparedness, mitigation, response and recovery.

With a focus on Sub-Saharan Africa and specifically on the SADC region, the learning process (LEP) on risk-informed urban development was implemented by GIZ through the integrated approach of the Global Initiative on Disaster Risk Management (GIDRM) and the “Connective Cities - Community of Practice for Sustainable Urban Development”. Contributing to the development of concepts for measures and/or projects for gender equitable and inclusive DRM practices based on the participatory risk analysis through the synergy of the LEP on RIUD, the learning process enabled the use of an agile, barrier-reduced learning and exchange platform for risk-informed urban development in SADC, which was employed by regional, national and local governmental and non-governmental actors, facilitating the integration of risk-informed decision-making at horizontal and vertical dimensions. The LEP on RIUD focused inter alia on the priority of “Sustainable Urban Centres” of the SADC Regional Resilience Framework 2020–2030. Lessons from this LEP are the result of a series of peer-to-peer exchanges on disaster risk management for risk informed urban development as well as expert presentations throughout a 12-months implementation which in sum aimed at:

1. Supporting the participating cities/municipalities to **develop solutions** to address hazards through **peer learning** and **customized technical advisory**;
2. Providing a platform for exchange (practical examples and expert knowledge) by practitioners (from **Sub-Sahara Africa with a focus on SADC** and **Germany**) from RECs, national/local government, civil society organizations, research institutions and private sector to **further enhancing the capacities** of cities/municipalities as they work on their solutions;
3. Complementing the **solution development with financial advisory** in readiness to submit proposals for funding;
4. **Documenting best practices** and generate policy briefs to guide cities/municipalities to inform legal reforms meant to enhance risk informed urban development, and
5. Facilitating the **development of scalable and/or replicable solutions** while building up a **network of cities and a network of experts**, addressing multi-actor, multilevel and cross-sectoral interdependencies, aiming at **strengthening risk governance and risk-informed development**.

Within the aim of the LEP on RIUD, lessons learned and key-take aways for RIUD have been grouped into five main clusters namely: 1) Legal & organizational setups; 2) Programmatic and actionable setups; 3) Budget & Funding; 4) Risk Assessment & Mitigation options and; 5) Data & Information flows. Followed by the description of the results under each thematic cluster, a series of recommendations are tabled under section 4 for further exchange and consideration. Equally relevant to the LEP on RIUD, were the expert sessions which accompanied and complemented the peer to peer exchange. An overview of all session is provided under "Annex 1: Expert sessions for RIUD and the Making Cities Resilient 2030 Roadmap (MCR2030)".

3. Lessons learnt and key take-aways for RIUD

3.1 Legal & organizational setups

Most stakeholders reported to and carried their work in silos, leading to available capacities and facilities being inefficiently utilized. Because of inefficiencies, hazards often turn into disasters, calling for the need to break silos for better coordination and/or mandates articulation and alignment. An additional aspect points towards a lack of missing DRM frameworks that provide coordination guidance, increasing the probability of occurring hazards turning into multiple ones and finally into disasters. In turn and where institutional vacuums and/or missing DRM frameworks were identified, the role of research institutes and/or universities play a vital role in assuming some of the vacuums. Specifically, the involvement of academia for DRM purposes as services providers for governmental entities, strengthened the policy-research interface by providing rigorous grounds for decision making. Independently, if this may alienate the purpose of universities and/or research institutes, governmental entities reach out to universities and/or research institutes for evidence decision making processes. Another mechanism which relates to missing or weak coordination schemes, is multilevel governance i.e., between regional - national – provincial – municipal and/or sectoral across levels, where consensus and/or interfaces cannot be established. Results showed that for better multilevel governance purposes, international cooperating or direct implementing partners can play a central role for convening, moderating, and mobilizing multiple stakeholders. Legal frameworks that were reported to make provisions for coordination mechanisms at national, provincial, district and wards level included the Disaster Management Act (2010) from Zambia.

In addition to legal frameworks, results also highlighted the relevance of "traditional coordination mechanism", which have a stronger focus on preparedness, combining the involvement local inhabitants, "civil protection committees", the Red Cross, the Fire brigade, and Police, specific examples of institutionalized schemes which report a combination of

endogenous and exogenous coordination mechanism, top-down and bottom-up, including the i.e the “Association of stakeholders” from Eswatini which are guided by the “Regional- and National Disaster Risk Management Agencies”. Promising developments on similar lines for improved coordination mechanism were identified in Namibia, which departing from the interface between the Directorate Disaster Risk Management at the Prime Minister’s Office and the Ministry of Urban and Rural Development have actively unpacked the “Disaster Management Act Num. 10 of 2012” and screened legal interfaces among existing frameworks like i.e. the “Local Authorities”, “Fire Brigade” to enable the “Local Authority Disaster Management Committees”.

3.2 Programmatic and coordination setups

Complementary to the fact that most stakeholders reported to work in silos, and that breaking these could lead to better coordination and/or mandate’s articulation, results showcased some examples where horizonal cooperation among other municipal departments can work and mainly conditioned by public servants knowing the other departments' specific competencies. Pursuing actively a constrictive understanding of mandates and competencies within the same organization and its institutions and beyond, serves closing institutional gaps, strengthening thus a preventive and precaution approach along agenda coherence.

The example of eThekwini Municipality in KwaZulu-Natal, South Africa, was particularly interesting as agents of change, actively addressed the interconnections at horizontal level. While the role of “Change Agents” was not an aspect which was prominently discussed, results show that next to the relevance policy makers play in igniting synergies across departments, municipalities, and academia, change agents are central for the sustainability and continuity of such process.

While results identified some consequences of institutional vacuums and/or missing DRM frameworks for better coordination, results also show that action plans can become the coordination basis for inter-sectoral departments. An example of this is the “Durban Climate Action Plan” which calls and empowers the participation of departments like “Disaster Management”, “Human Settlements”, “Area-Based Management”, “Environmental Planning and Climate Protection”, “Engineering Unit”, “Parks, Recreation and Culture” and “Spatial Planning” Departments’ across sector boundaries. At project level, results identified the “Transformative riverine management program (TRMP)” which initiated by the water sector in eThekwini, crosscut the benefits outside the sector becoming a vehicle for holistic flood preparedness and risk reduction in informal settlements by also configuring an early warning system tailored and communicated to settlement dwellers from the disaster management control room to the municipality to the academia down to informal settlement representatives’ as trained response team leaders.

3.3 Budget & Funding

Results showed that budget and funding in the region is still mainly focused on responding to and recovering from disasters. Some SADC-Member States have disaster funds in place i.e., for tents and food. However, while disaster risk management is budgeted for at national level and mainly managed at national level, competition for allocation at subnational level for any DRM matters was observed. Results also showed that international cooperating partners have a similar approach and focus as national levels, mainly on disaster response. With a disconnect between budgeting and allocation, between preparedness and response from international and national on DRM measures, cities are often challenged to develop and implement preparedness plans on their own and through other budget items. In other words, prevention has been assumed by the municipalities as i.e., where hazard maps informing vulnerability reduction measures have been developed by Manzini in Eswatini, endogenous/local preventive and reactive committees keep on being the most effective in comparison to the

nationally organized in DRC, etc. and leverage effects in combining DRR and climate change adaptation for funding have been identified. Unfolding example towards comprehensive risk management include the “Resilience Action Plans” from i.e., Zomba, Malawi

3.4 Risk Assessment & Adaptation options

Results showcased some of the disaster risk assessment tools and frameworks that have been successfully piloted in the SADC region i.e., the “Community-based resilience analysis” (CoBRA), “Technical Assistance to Non-Governmental Organizations” (TANGO) and the “Community Capital Framework”. In the course of such assessments, it was underlined that risks need to be assessed as a complex system, in which behavior and decision making in the network determines the exposure and vulnerability at all scales. Aware of the systemic nature of hazards, mitigation options for flood prevention were categorized by hard & soft engineering measures. Hard measures refer to i.e., dikes and flood retention walls, or flood proofing already built structures, etc.; while soft: included the for example amending current land use regulations, flood insurance, raising awareness and education of citizens to flood risk, and investing into rigorous data systems, etc. Specific examples from the results included the strengthening building codes and building regulations from Chililabombwe, comprehensive river management, combating deforestation and land use changes for the growing population from around the Victoria Lake, restoring native land covers AND conservation of these from Quelimane. Additional results pointed towards a “Floodlabel” which as soft engineering measure adapted and proven measure in Ghana, assesses the flood risk (residential) properties, provides specific recommendation of measures to reduce the risk of floods and allows residential owners to engage in taking necessary measures to improve their “label value”. The “Flood labelling initiative” showcased options on how to inform urban dwellers in making informed choices when buying residential buildings as well as to encourage the housing market to develop less exposed and vulnerable buildings.

3.5 Data & Information flows

Scattered information sources and non-standardized data is a recurrent challenge in the region. Results showed that, in the case of disasters and when capacities are limited, the media becomes indirectly the verification source for further decision making. While this doesn’t imply a critic bust suggest a window of opportunity, early warning systems and risk data (by involving the Meteorological Services/Departments for EWS development and communication) were also described as favoring domestic and international investment.
Form a communicational perspective, results showed that the use of international days can become leverage points for awareness raising and stakeholder engagement, specifically by showcasing the interlinkages between climate change adaptation, DRR, risk-informed development and the international’s day occasion. As means for communication, beyond the written text, art resulted to be also a mean that transcends barriers (technical language, culture, geography, age, and background).

4. Recommendations for RIUD in the SADC

The following conclusions and/or recommendations have been put forth based on all the lessons learnt from the LEP of RIUD. The recommendations are articulated according to the structure of recommendations provided by the “Regional Assessment on Urban Vulnerability and Resilience in Southern African Development Community Member States Strengthening Capacities for Reducing Urban Vulnerability and Building Resilience in Southern Africa” (UNHabitat, 2022) yet drawn from the LEP for RIUD as follows:

Enhance policy, legislation, institutional and organizational setups with a stronger risk informed development focus

- Risks are created by our (sectoral) development decisions
- Risks are no longer a standalone matter but are increasingly interconnected and more and more systemic
- The integration of climate change adaptation as well as DRR measures are an imperative for sustainable development.
- Invest in evidence-based decision-making processes to ensure that risks are integrated into development decisions
- Ensure that the kind of policies that are made are also risk-informed
- Ensure that risk-informed development informs choices and decision at all levels, and is people centered
- Strengthen decision makers (including the national and local parliaments) to include risk informed development.
- The international architecture of ICPs requires recalibration so that climate change adaptation and disaster risk reduction are better integrated and efficiently financed.
- Identify points of entry between DRR and CCA that enables a reset up within and among organizations (break silos)
- There is no need to have a separate policy on CCA and DRR policy, but rather one that looks towards city resilience plans and the integration of both approaches
- Ensure proper placement of the disaster risk management coordinating units within cities in order to give them the necessary authority and convening power on matters of DRM and RID mainstreaming by line departments and units.

Invest in capacity building, knowledge, and information management

- Raise awareness of risks (hazards, vulnerability, exposure) amongst the population
- Train and/or build the necessary capacities for reducing vulnerability and exposure among the local population
- Educate with contents that promote adaptation and climate action
- Share information with community leaders for disaster preparedness
- Sharing information and knowledge as well as hazard mapping at community level are key elements for disaster preparedness strategies in cities and local governments.
- Existing tools for DRR-CCA mainstreaming can be used and have been already piloted, in using these, ensure that multiple actors have the tools and processes know to them and is not exclusive to administrative entities
- Invest in data generation and availability for better communication purposes and thus, evidencing decision making processes for risk-informed urban development.

Strengthen regional and national urban planning for building resilience

- Cities have become the centers human activity and thus are exposed to the confluence of risks
- Strengthen local governments as these are at the first line on disaster preparedness.
- Support local governance trans-boundary collaboration to ensure mutual assistance and collaboration in planning, preparedness and response operations as well as sharing of resources, whenever necessary.
- Risk informed urban development is so relevant, as well as ensuring this practice populates the urban scale, meaning that it ensures a systems' thinking and brings all relevant actors and stakeholders together.
- Plan with the people and not for the people
- Greater synergies must be ensured by for example looking at the NUA, the Sendai Framework on DRR
- Vulnerability mapping requires interdisciplinary teams which imply the involvement of different departments and services for option appraisals.
- With a young population in demographic terms, Africa is amongst the fastest

urbanizing regions in the word, it is imperative that development interventions and RID approaches are centered in these cities in Africa as many of the cities are emerging, transitioning, intermediary and/or border towns, etc. The call for interventions on risk-informed development is NOW as opposed to later in infrastructure retrofitting.

Disaster risk financing and socio-economic considerations

- Invest in capacity building measures that level financing sources for RID and climate change adaptation.
- Along private / or individual developmental decisions, citizens need to have options and be aware on how RIUD ensures the economic survival of cities
- Consider gender equality, the different vulnerability groups, and differenced adaptation measures
- Vulnerable groups that are mainly found in the informal settlements and disproportionately affect more women and children.
- Urban residents are affected differently during the implementation of projects, special attention for different groups in providing solutions is required.
- Appreciate the roles and powers/levels of vulnerability of different stakeholders also during the implementation of development projects.
- Gender roles differ from one society to another.
- Acknowledge that communities associate high-risk exposed areas with their way of life, and that to reduce their developmental risks as well as the cities' developmental gains options to social and economic norms need to be changed
- Cities should climate-proof all their projects as for mainstreaming risk-informed development.
- Take urban dwellers and citizen's' knowledge into account, particularly pay attention in capitalizing the know-how of the technical staff at the local governments level, this aspect is key for better risk governance.
- "Budget(ize) risk" - like in human health and sickness, prevention is more cost-efficient for ensuring health as well as for ensuring developmental gains.

Offer and promote durable solutions

- Regular maintenance and repairs due to x-y reasons in infrastructure highlight the interdependencies between different sectors i.e., solid waste management, drainage, and health.
- Use nature-based-solutions for climate change adaptation measures and preparedness
- Promote locally available materials as for reducing dependencies
- Link RIUD to local economic development

Strengthen multi-level, inter-country and inter-city cooperation

- The sustained functionality of cities requires coordination beyond boundaries and a systemic view to keep such functionality by intertwining climate change adaptation and DRR at multiple scales.
- Find common grounds as for overcoming the barriers of communication and consultation between national and local governments when building (social) and critical infrastructure.
- The working-group on RIUD, as well as other initiatives are relevant for ensuring that development gains towards the Agenda 2030 can be sustained.
- The Urban Risk and Management and Resilience Strategy by UNDP has the ambition to expand the list of cities in partnership, in cooperation with MCR2030, to additional 30 cities where the concept of RIUD may be a key component to the approach of the strategies' implementation.
- The "Transformative Riverine Management Programe" from eThekwini was

considered as a good example of risk-informed development.

- Challenges to the well-functioning of infrastructure i.e., invasive plant species can be turned into a job-creation opportunity by securing the sustained functioning of critical infrastructure to cities and its networks.
- City-to-city exchange facilitated by GIZ, showcased innovation on both cooperating parts as well as further unfolding of synergies with other cities and co-financing sources.
- City-to-city climate partnerships should entail visions of urban development and/or risk-informed urban development. Such visioning processes should be carried out jointly between city-to-city partners and be carried out from the beginning of every partnership at the highest local governmental level.

Lessons learned and conclusions

The RUID engagement processes have revealed fundamental issues necessary for enhanced municipal performance in an integrated and sustainable manger. Critically important is the need to focus municipal repositioning on improving architecture for achieving robustness in municipal systems and realise resilience in municipal systems and processes. This can fundamentally be achieved by enhancing municipal policy, legislation, institutional and organizational setups with a stronger risk informed development focus.

This is due to the realisation that risk-informed decision-making is a prerequisite for sustainable development and fundamental to preventing the creation of risk. Therefore, building capacities for integrated risk-informed decision-making by emphasizing horizontal and vertical dimensions and enhancing the necessary structures of risk governance at regional and global levels able to connect with, be informed by, and guide and support national and local-level risk reduction has been also considered as key measure by the Midterm Review of the Sendai Framework 2015–2030 (UNDRR 2023) which should be given prominence.

Annex 1: Expert sessions for RIUD and the MCR2030 Roadmap

1. Risk informed development: Securing development gains among multidimensional risks
   United Nations Development Program (UNDP), Mr. Rajeev ISSAR
   (Presentation LINK); (Recording LINK)
2. Pursuing risk-informed urban development that leaves no one behind
   Asian Development Bank (ADB), Mr. Arghya SINHA ROY (ADB)
   (Recording LINK); (Session's summary LINK)
3. Harnessing the INFORM platform as a tool for national authorities to design the DRR strategies at different levels, from local to national
   Joint Research Centre | European Commission (JRC), Dr. Karmen POLJANSEK
   UN Office for the Coordination of Humanitarian Affairs (UNOCHA), Dr. Andrew THOW
   UN Office for Disaster Risk Reduction (UNDRR), Mrs. Galiya IBRAGIMOVA
   (Presentation LINK JRC, UNOCHA, UNDRR); (Recording LINK); (Session's summary LINK)
4. Multi-risk exposure modelling: Earth observation techniques for natural hazard risk assessment
   German Aerospace Center (DLR), Dr. Christian GEISS
   (Presentation LINK); (Recording LINK)
5. Downscaling: Projecting GCM data at the city scale with the cumulative impact assessment on multiple stresses on the water sector at the municipal level
   Asian Institute of Technology (AIT), Dr. Sangam SHRESTHA
   (Recording LINK); (Session's summary LINK)
6. Exposure modelling: Automated characterization of exposed buildings with street-level imagery and deep learning
   German Aerospace Center (DLR), Mr. Patrick ARAVENA PELIZARI
   (Presentation LINK); (Recording LINK); (Session's summary LINK)
7. Modelling cascading effects in networks
   Technical University of Munich (TUM), Mr. Hugo ROSERO
   (Recording LINK); (Session's summary LINK)
8. Dynamic vulnerability
   GFZ German Research Centre for Geosciences (GFZ), Mr. Juan Camilo GÓMEZ-ZAPATA
   (Recording LINK); (Session's summary LINK)
9. Critical Infrastructure: Building CapaCITY
   Cologne University of Applied Sciences (TUK), Mrs. Johanne KAUFMANN, Mr. Chris HETKÄMPER, Mrs. Carlotta BAUER
   (Recording LINK); (Session's summary LINK)
10. The City Resilience Action Planning Tool (CityRAP-Tool) (jointly with GIZ)
    Disaster Risk Management Sustainability and Urban Resilience (DIMSUR)
    Mr. Nuno REMANE
    (Presentation LINK); (Recording LINK); (Session's summary LINK)
10. City Climate Finance Gap Fund (jointly with DIMSUR)
    Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Mrs. Vanessa BAUER
    (Presentation LINK); (Recording LINK); (Session's summary LINK)
11. MCR2030 Dashboard and Disaster Resilience Scorecard for Cities by UNDRR
    UN Office for Disaster Risk Reduction (UNDRR), Mrs. Isabel Njihia
    (Presentation LINK); (Recording LINK); (Session's summary LINK)

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