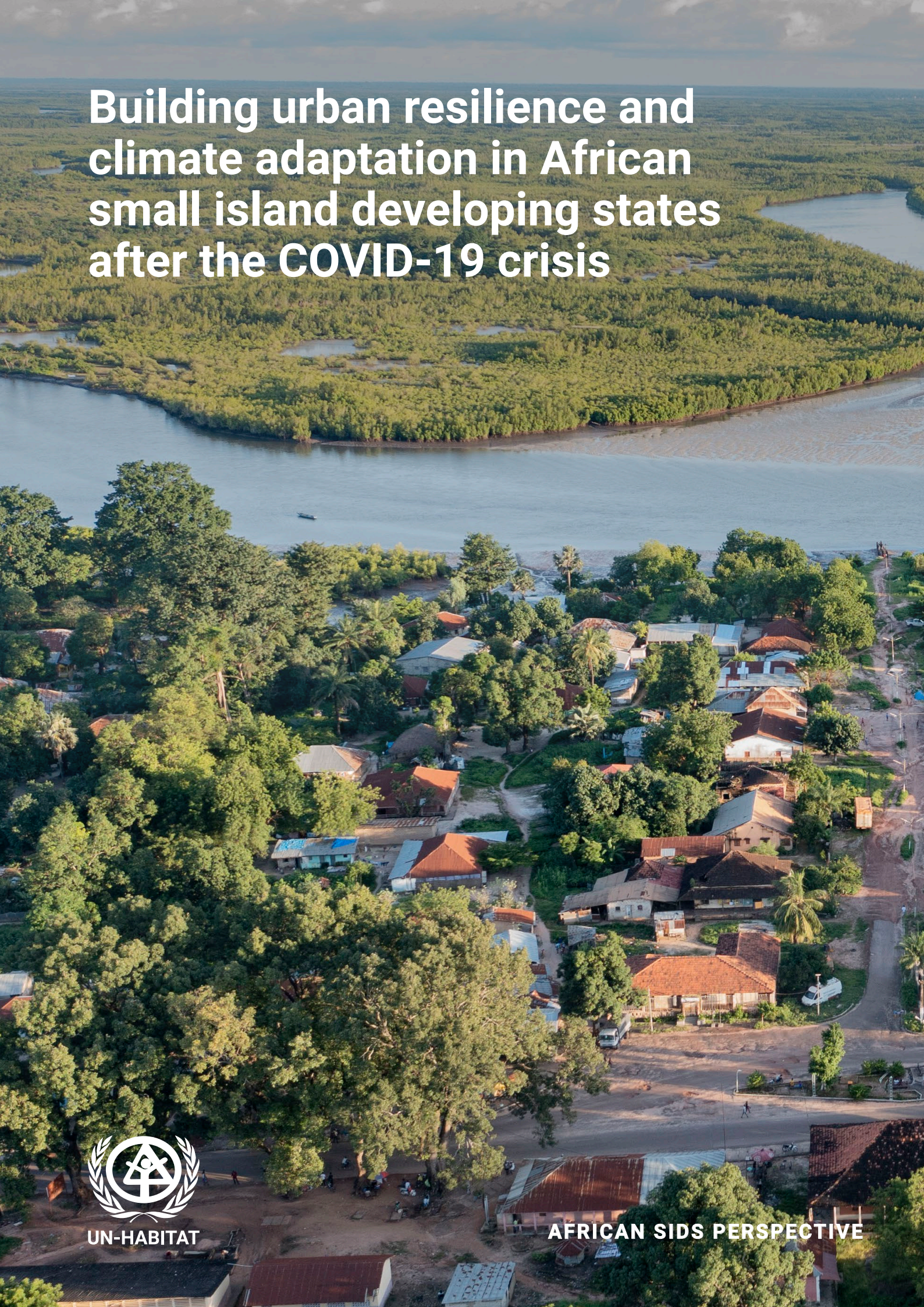
Building urban resilience and climate adaptation in African small island developing states after the COVID-19 crisis



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AFRICAN SIDS PERSPECTIVE

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Abbreviations and acronyms

AFD	French Development Agency (French acronym)
CityRAP	City Resilience Action Planning (tool)
COP	Conference of the Parties to the United Nations Framework Convention on Climate Change
DAC	Development Assistant Committee
DIMSUR	Disaster Risk Management Sustainability and Resilience Institute
EbA	Ecosystems-based adaptation
ECOWAS	Economic Community of West African States
ECCAS	Economic Community of Central African States
Economic Community of West African States	Economic Commission for Latin America and the Caribbean
Economic Community of Central African States	United Nations Economic and Social Commission for Asia and the Pacific
GCF	Green Climate Fund
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
GIS	Geospatial Information Systems
HDI	Human Development Index
ICT	Information and Communication Technology
IFHV	Institute for International Law of Peace and Armed Conflict
IMF	International Monetary Fund
INSEED	Comorian National Institute for Statistics, Economic and Demographic Studies (French acronym)
IOC	Indian Ocean Commission
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature and Natural Resources
LDCs	Least Developed Countries
MATUAFTT	Ministry of Urbanism of Comoros (French acronym)
NbS	Nature-based solutions
NDCs	Nationally Determined Contributions
NGO	Non-governmental organisation
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
PSUP	Participatory Slum-upgrading Programme, UN-Habitat
RFA	Resilience Framework for Action
ROAf	Regional Office for Africa
SADC	Southern African Development Community
SDF	Spatial Development Framework
SDG	Sustainable Development Goal
SeyCCAT	Seychelles Conservation and Climate Adaptation Trust
SIDS	Small Island Developing States
STP	São Tomé and Príncipe
ToT	Training of Trainers
UCLG	Training of Trainers
United Cities and Local Governments	World Risk Index
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNFCCC	United Nations Framework Convention on Climate Change
UN-Habitat	United Nations Human Settlements Programme
UN-OHRLLS	United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States
WB	World Bank
WRI	World Resources Institute

Preamble

This policy paper was prepared in the context of the project "Strengthened Capacities of African, Caribbean and Pacific SIDS for Green, Resilient and Pro-poor Pandemic Recovery", of the 14th tranche of funding by the United Nations Development Account, UNDESA. It is part of a four-report series on urban resilience building in post-COVID-19 contexts, comprising three regional policy papers and one global report.

This paper draws on learnings from UN-Habitat Regional Office for Africa (ROAf)'s broader African SIDS portfolio activities, and from the specific outcomes of the above-mentioned project. In the African region, project activities were implemented in two pilot countries, São Tomé and Príncipe and Comoros, where post-pandemic recovery priorities aligned with the imperative to strengthen urban resilience, against high levels of climate and socioeconomic vulnerabilities. In Comoros, the focus on climate risks was further justified by the post-disaster context, since the project period coincided not only by COVID-19 but also with the devastating event of Tropical Cyclone Kenneth in April 2019, one of the most severe in the archipelago's history.

Drawing on the direction taken by the project in the region, this policy paper deliberately focuses on resilience towards natural and climate risks, rather than addressing the health consequences of COVID-19 in African SIDS. However, it uses the pandemic as a time marker and a critical moment to reflect on compounding vulnerabilities, risks, challenges and lessons learned from crisis management and recovery in insular contexts. Taken together, contributions from Pacific, Caribbean, African and Global SIDS remain deeply complementary, feeding into a comprehensive analysis of the specific challenges that SIDS' cities and human settlements face in a world hit by multiple shocks and stresses.

Map 1. Small Island Developing States (SIDS) - ROAf

Source: UN Geospatial Hub & UN UN OHRLLS

Introduction

01

The increasing frequency and intensity of climate-related hazards pose unprecedented challenges to human settlements worldwide. Despite their minimal contribution to global greenhouse gas emissions and the overall acceleration of climate change, Small Island Developing States (SIDS) bear a disproportionate burden of its negative impacts. If their specificity and increased vulnerability are now mostly acknowledged on the multilateral scene, the attempts to support SIDS governments in their efforts to build resilience are still insufficient regarding the growing and multi-dimensional risks that insular populations are facing.

The COVID-19 pandemic, though a global crisis, was a good indicator of SIDS increased vulnerability to external shocks and stresses. If the virus's health impacts remained limited in SIDS, compared to continental states, the economic and social shockwaves of the pandemic mirrored the destructive impacts of the natural hazards that frequently impact island nations. In particular, the combination of the sudden interruption of tourism flows, due to the global lockdown, with the world economic crisis that followed, triggered systemic disruptions that exposed underlying vulnerabilities. In that sense, COVID-19 served as a critical inflection point in SIDS, revealing the profound interconnectedness of environmental, economic, and social systems and highlighting the urgent need for integrated approaches to crisis management.

The Intergovernmental Panel on Climate Change (IPCC) has documented the mounting risks facing small islands: sea-level rise, escalating temperatures, intensifying tropical cyclones, storm surges, droughts, shifting precipitation patterns, coral bleaching, and the spread of invasive species. These phenomena have direct and often devastating consequences for local economies, livelihoods, and ecosystems. In some cases, the relentless frequency of hazards traps national and local authorities in perpetual emergency response modes, depleting resources that could otherwise be directed towards prevention and anticipatory mitigation.

For African SIDS –comprising Cabo Verde, Comoros, Guinea-Bissau, Mauritius, São Tomé and Príncipe (STP), and Seychelles[1]– these challenges are particularly acute. Geographically and demographically diverse, these six countries are united by the urgent need to develop robust,

Table 1. Presentation of the African SIDS in terms of population (2023), surface (2022), location and number of islands.

Country	Population (2023)	Surface (2022)	Location	Number of islands
	Number of inhabitants	in km²		Total, (not) populated
Cabo Verde	522 331	4 030	Atlantic Ocean	10 islands (9 islands are populated)
Comoros	850 387	1 861	Indian Ocean	3 islands (all 3 islands populated)
GuineaBis-sau	2 153 339	36 130	Atlantic Ocean	88 islands and islets (20 are populated)
Mauritius	1 261 041	2 007	Indian Ocean	5 islands (all 5 islands populated)
STP	230 871	960	Atlantic Ocean	2 islands and several islets (both islands populated)
Seychelles	119 773	460	Indian Ocean	115 islands and islets (3 islands concentrate most of the population)

Source: World Bank, 2025a, 2025b.

1. Due to its size, and despite sharing a lot of characteristics with these states, Madagascar is not considered as a SIDS by the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS)

integrated strategies for managing multi-hazard risks and building resilient human settlements.

The present policy paper emerges from UN-Habitat's commitment to support these nations in their resilience-building efforts. It draws extensively on the lessons learned, and insights accumulated by UN-Habitat and its Regional Office for Africa (ROAf) across decades of cooperation and dialogue with African SIDS's urban, climate and environment stakeholders. Concrete case studies presented in boxes throughout the paper illustrate the intricate bond of this research with practice and projects, highlighting the creativity and positive impact of existing solutions developed at all levels of governance in SIDS. But the report also builds upon a very rich and prolific literature on resilience building and disaster risk management challenges in SIDS, including crucial international agreements and frameworks, such as the 2030 Agenda, the New Urban Agenda, the Paris Agreement, the Sendai Framework for Disaster Risk Reduction and the SAMOA Pathway.

By examining the intersections of vulnerability factors, climate change effects, urban development challenges, and other disaster or crisis risks in these specific contexts, it aims to provide actionable insights and recommendations, to guide policymaking towards fostering resilient, sustainable and inclusive human settlements in African SIDS.

As climate change continues to reshape our world, the resilience of human settlements becomes paramount. For African SIDS, this is not just a theoretical challenge, but a matter of necessity –especially regarding the threat that sea-level rise poses to small islands globally. Luckily, awareness is growing, and convincing solutions continue emerging, many of them coming from SIDS governments and communities themselves. Supporting these efforts by scaling up, expanding or emulating these positive initiatives and promoting transformative action will be key for the future.

Climate and socioeconomic vulnerabilities in African SIDS

02

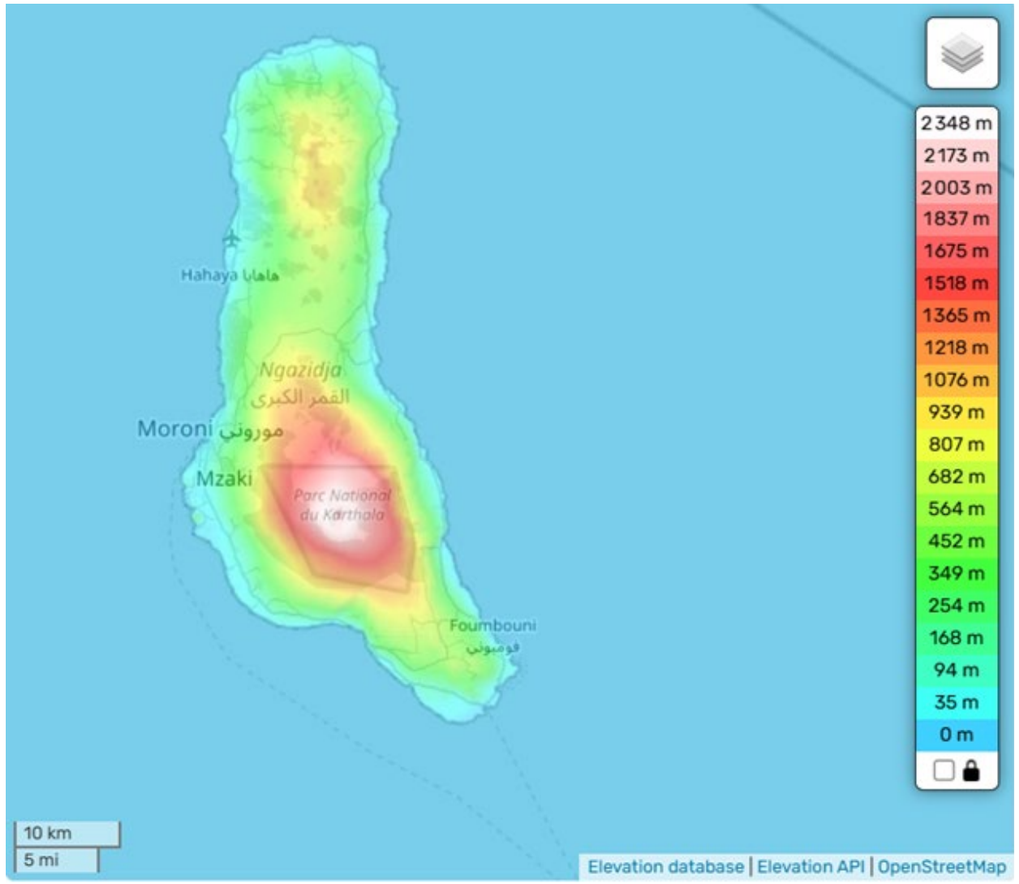
Introduction to African SIDS and their specific challenges.

Despite having a much smaller contribution to climate change than most countries in the world, SIDS range among the most vulnerable nations to the threats posed by pollution, global warming and intensification of hazards. African SIDS are not an exception to this. Before getting to the core of these climate change related challenges, this section will stress the specific difficulties and threats that Cabo Verde, Comoros, Guinea-Bissau, Mauritius, São Tomé and Príncipe, Seychelles and other SIDS face regularly, due to their intrinsic SIDS characteristics.

SIDS are… small.

Scarcity of land is one of the major challenges that SIDS are facing. Due to their size and insular nature, these countries must cope with issues such as lacking space to respond to demographic demands, or simply to support productive activities. States like Singapore, the Maldives or Mauritius range among the most densely populated countries in the world. And even in the less populated SIDS, like São Tomé and Príncipe or Seychelles, human settlements are usually concentrated on narrow stretches of land. In Comoros' most populated island, for example, the distance between the coast and the steep slopes of the hills/volcano landscape is often under 5km

Figure 1. Grande Comore's topography.



Source: Open street map (Retrieved 2025)

(see Figure 1), leaving limited space for economic and residential activities.

In some SIDS, the combination of space limitation with high demographic pressure and the lack of urban planning induces the emergence and growth of informal settlements. These tend to expand in high-risk areas such as flood-prone coastal zones or slopes prone to landslides.

Another challenge related to the small size of SIDS' population is the difficulty to operate public systems with a limited number of taxpayers, and to achieve economies of scale. As a result of these challenges, SIDS range among the most indebted developing countries in the world (UNCTAD, 2024.

SIDS are… islands.

Remoteness is a multidimensional concept, encompassing aspects related to physical distance but also to the lack of connection. It has long been considered an inherent feature of SIDS, due to their insular nature. In economic and social terms, remoteness has important costs for SIDS, who have to pay the price of their distance from the main production centres, facing disproportionately high trade and transportation costs. On a more political perspective, physical distance can also make it more costly for SIDS representatives to attend international events including deploying their diplomacy. This prevents them from increasing their network, reaching sources of finance, and exerting an influence on crucial topics, like the climate injustice they experience. Remoteness within SIDS territories should also be considered, in the case of countries with more than one island. When most activities and transport facilities are located around the capital city, in the "main" island, the other islands experience higher isolation, being remote even from domestic activities, national trade and public services.

However, a recent study (UNCTAD, 2021a), based on a multi-indicator definition of this concept, has shown that contrary to common assumptions, SIDS might sometimes find themselves in a less remote position than other groups, like the Least Developed Countries (LDCs).

Still, the study notes that SIDS remain on average the most deprived of access to financing sources. Moreover, a closer look at the individual scores obtained by Comoros, Guinea-Bissau, Mauritius, Cabo Verde, São Tomé and Príncipe and Seychelles in the UNCTAD index reveals that these states are all subject to high degrees of remoteness. Their respective indexes are situated between 70 and 55, 100 corresponding to the highest score in terms of remoteness. LDCs, on the other hand, reach an average score of 56. Overall, African SIDS are thus more remote than other non-SIDS groups mentioned in the study, a result that points towards the specificity of the challenges SIDS are facing.

In comparison with other SIDS regions, it is worth mentioning that African SIDS stand out as more remote than the Caribbean SIDS, but slightly less than the Pacific SIDS.

SIDS are… developing.

Apart from their physical and geographic features, SIDS are also confronted with many of the institutional and socioeconomic challenges that developing states can face. These include demographic pressure, fragile economies, a lack of opportunities at the local scale, poor or poorly maintained infrastructure, high level of inequalities, as well as weak governance structures and a lack of capacity at the governmental levels.

In the case of the six African SIDS, three of them are also LDCs, namely: Comoros, Guinea-Bissau and São Tomé and Príncipe. According to UNCTAD (2022), the additional difficulties faced by LDCs compared to developing states include: debt burden (often aggravated by the COVID-19 pandemic); weak export base, and commodity-dependence; energy poverty and increased climate vulnerability.

SIDS are… multiple states.

Despite sharing common features and belonging to the same continent, African SIDS remain diverse. The main differences separating them are of cultural, socioeconomic and geographical nature. Unlike their Caribbean and Pacific counterparts, African SIDS cannot draw on the same level of regional integration, which limits their capacity to engage in regional initiatives, joint funding and collective advocacy.

Language and culture

Language and culture stand out as a first obstacle to the unity of African SIDS. On the Atlantic side, Cabo Verde, Guinea-Bissau and São Tomé and Príncipe are all Lusophone countries, a heritage of their colonial history. Cabo Verde and Guinea-Bissau share even closer bonds and fought together for independence from Portugal until their split in 1980. On the Indian Ocean side, Mauritius, Seychelles and Comoros all have French as an official language, although their populations also use other languages such as English and Creole for the two first, and Arabic or Comorian for the latter. In the region, French is also spoken in Madagascar, another island state, and in Mayotte and La Reunion, two French overseas departments. The language diversity between African SIDS is not a problem per se. Still, it constitutes an additional difficulty to generate synergies between them, as equally observed in the Caribbean region (UN-Habitat, 2025). As an example, managing a common cooperation initiative targeting the six SIDS would require multilingual skills.

Geographic realities

Geographic distance between the six SIDS also constitutes an important element to take into consideration. Contrary to the proximity of Comoros, Seychelles and Mauritius with Madagascar or the French overseas, the distance between Indian Ocean SIDS and the Atlantic African SIDS stands out as another big obstacle to their collaboration and coordination. Divided by their language differences and by a whole continent, these two groups have limited mutual connection and are usually approached separately by international organizations and donors. Due to their cultural and linguistic heritage, as well as their location, Cabo Verde, Guinea-Bissau and São Tomé and Príncipe tend to have more South-South exchanges with continental West African or Lusophone countries (Angola, especially) or even with Brazil, whose cooperation has had a strong focus on African Lusophone countries (White, 2010). Still, the absence of direct flight connections, even between Atlantic SIDS themselves, remains an obstacle to enhancing dialogue and technical exchanges. Differences in time zones between SIDS, and

Table 2. Economic and poverty indicators in African SIDS.

Country	Income group	GDP	GDP per capita	HDI	Poverty
	2024	(current US$) 2024	(current US$) 2024	Human Development Index 2023/24	Poverty headcount ratio at $2.15 a day (2017 PPP) latest year available
Cabo Verde	Lower middle income	2.53 billion	4 851	0.661 Medium	4.6
Comoros	Lower middle income	1.35 billion	1 590	0.586 Medium	18.6
Guinea Bissau	Low income	2.05 billion	951	0.483 Low	21.7
Mauritius	Upper middle income	14.64 billion	11 613	0.796 Very high	0.1
São Tomé and Príncipe	Lower middle income	0.68 billion	2 941	0.613 Medium	15.6
Seychelles	High income	2.41 billion	17 879	0.802 High	0.5

Sources: World Bank 2025c, 2025d; UNDP 2024. For Poverty, latest year available (World Bank, 2025e): Cabo Verde (2015); Comoros (2014); Guinea-Bissau (2018); Mauritius (2017); São Tomé and Príncipe (2017); Seychelles (2018)

especially between the two sides of Africa, are another barrier to the consolidation of a dialogue between the two sub-regional groups.

- **Economic disparities**

Another element that has prevented the grouping of African SIDS in a unified sub-regional group is the economic disparities between them. Ranging from low income (Guinea-Bissau) to high income countries (Seychelles), with even a distinction between the two lower-middle income (Cabo Verde and Comoros) and the upper middle-income country (Mauritius), the six states illustrate the full spectrum of economic status considered by the World Bank (2022). Some of them are not even considered by the OECD-DAC as Official Development Aid (ODA) recipients anymore (Seychelles). Once again, these disparities act as an obstacle to the consolidation of South-South relations between the six African SIDS. This may even further reduce sub-regional exchanges, especially among the Indian Ocean SIDS, given the significant wealth gap between Seychelles and Comoros.

- **African SIDS, a no-region**

As a result of these disparities, African SIDS have hardly been considered as a unified regional group on the international scene. This has prevented them from dialoguing and seeking common solutions to their shared issues. From an international cooperation perspective, their differences have also tended to reduce the chances for African SIDS to leverage regional or SIDS-targeted funding opportunities. Instead, most agencies and financing actors have split them into different sub-regional portfolios, making it difficult to address their issues in an integrated manner.

Analysing African SIDS' exposure to climate change impacts, disaster risk, and crises

In its Sixth Assessment report, the Intergovernmental Panel on Climate Change (IPCC) states that "compared to larger landmasses, many climate change-driven impacts and risks are amplified for small islands" (IPCC, 2022). This is particularly true for African SIDS, whose climate and hazards sensitivity partly derives from the inherent characteristics presented in the first section: the small size, the insular and bounded nature and the remoteness. However, the 'exposure' factor should not be neglected or underestimated, especially regarding the multiple threats posed by

Table 3. Natural and climate hazards threatening human settlements in African SIDS.

African SIDS	Natural or climate hazards
Cabo Verde	Sea level rise combined with coastal erosion, floods (including flash floods), tropical storms, extreme heat, droughts, volcanic eruption, tsunamis
Comoros	Sea level rise combined with coastal erosion, floods (including flash floods), tropical storms (including cyclones), extreme heat, droughts, volcanic eruption, earthquake, tsunamis
GuineaBissau	Sea level rise combined with coastal erosion, floods (including flash floods), storms, droughts, extreme heat, earthquake, tsunamis, wildfires
Mauritius	Sea level rise combined with coastal erosion, floods (including flash floods), tropical storms (including cyclones), extreme heat, droughts, volcanic eruption, tsunamis
STP	Sea level rise combined with coastal erosion, floods (including flash floods), tropical storms, extreme heat, droughts
Seychelles	Sea level rise combined with coastal erosion, floods (including flash floods), tropical storms, extreme heat, droughts

Sources: NDCs (UN-Habitat, SDU.Resilience, UNDP, 2024) completed by GFDRR Country profiles (GFDRR, n.d.) and

Box 1. Unpacking disaster risk

Disaster risk: Combination of the probability of a hazardous event and its negative consequences.

Disaster risk = **Hazard probability** x **Vulnerability**

Hazard probability: The probability that a particular hazard will occur depending on the frequency of the hazard and on predictions about its magnitude.

Vulnerability: The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.

Hazards are environmental events (natural or human-induced) that pose potential harm to human societies and the environment. Natural hazards include geology-related hazards like earthquakes, volcanic eruptions, tsunamis, and landslides, as well as climate-related hazards such as tropical cyclones, tornadoes, droughts, thunderstorms, lightning, and floods. Other hazards include insect infestations, disease epidemics, and wildfires.

Climate change and human-induced hazards, a blurry line: Human-induced hazards result from human actions affecting the environment and society. Climate change blurs the line between natural and human-induced hazards, which are contributing to increased frequency, intensity, and probability of natural hazards, thus increasing disaster risk.

Disasters occur when people and assets are exposed to hazards and are unable to cope with them. They can lead to loss of life, injury, property damage, and disruptions to human activities. Climate vulnerability refers to the extent to which people, species and systems (societies, cities, ecosystems, etc.) are susceptible to, and unable to cope with, the adverse effects of climate change.

Capacity is the combination of all the strengths, attributes and resources available within a community or society that can be used to withstand and recover quickly from any disturbances (current or future). This concept can encompass infrastructure and physical means, institutions (legal, policy framework), knowledge and awareness, skills and collective attributes, social relationships, leadership and management.

$$\text{Vulnerability} = \frac{\text{Exposure} \times \text{Sensitivity}}{\text{Capacity}}$$

geological, natural or climatic hazards, and even by other types of crisis and risks, including human induced. This section presents the main risks that African SIDS are exposed to, reflecting on the consequences that unmitigated disasters can have on their economies and livelihoods. It also discusses the weight of strict hazard 'exposure' in African SIDS's vulnerability equation, using the World Risk Index to analyse their situation in comparison with other groups of states. Finally, it takes the COVID-19 crisis as a case study, to reveal African SIDS' vulnerability to external shocks.

African SIDS are highly exposed to hazards and the effects of climate change

In African SIDS, the impacts of climate change are already being felt. As explained before, the six countries remain very diverse in size, localization and types of landscapes; therefore, the negative effects of climate change trigger differentiated risks and situations. The diversity of natural hazards and phenomena affecting African SIDS is illustrated in Table 3.

Despite their differences, the six African SIDS still share common risks, among the major threats posed by climate change effects. Apart from the above-mentioned, water and soil acidification, vector-borne diseases and land degradation were also mentioned by most Nationally Determined Contributions (NDCs) reports (UN-Habitat, SDU. Resilience, UNDP, 2024).

Sea-level rise, a direct consequence of global warming, is threatening the livelihoods of thousands of people living in coastal areas. Coastal erosion, that can sometimes result from this phenomenon, but also from human-induced activities, is also provoking important land and biodiversity losses in SIDS. In some localities, it is progressively erasing the sandy beaches from the map, jeopardising the tourism potential of these areas. This is particularly the case in São Tomé and Príncipe and in Comoros, where beaches that used to be tourism hotspot have progressively deteriorated and shrunk, losing part of their attractiveness. More generally, sea-level rise combined with erosion directly threatens the future of SIDS' human settlements, by reducing the quantity of land available for their peoples and economies. In the Republic of Seychelles, the last decade saw the emergence of the first national sea-level-rise-related relocation programs, to help the inhabitants of flooding-prone areas to move to safer neighbourhoods.

Another shared reality is the change in precipitation patterns, leading to an intensification of extreme meteorological events. These include either prolonged droughts, or massive storms and rainfalls, including flash floods and cyclones. Affecting all African SIDS and in an increasing way, droughts present severe threats for agriculture in contexts where food production are already insufficient, and food security not ensured. However, floodings remain the first and most common hazard across African SIDS. Triggered by rainfalls and storms, they represent a massive threat in human settlements, especially in the most vulnerable areas, where drainage systems and other basic services are absent or dysfunctional. In some cases, riverine floods tend to combine with ocean waves and coastal floods, causing important loss and damage for communities and human settlements located in coastal areas. Ground artificialization in cities can also be a catalyst for long-lasting floods, especially in the case of flash floods. In the Western Indian Ocean region, notably around the Mozambique Channel, cyclones happen on seasonal basis and can't be prevented. If some countries or islands have developed effective ways to strengthen their resilience and protect their populations, others remain highly vulnerable to the effects of cyclones. With the warming of ocean waters, these also tend to become more intense and more harmful for the populations.

Cyclone Kenneth in Comoros in 2019 provides a tragic illustration of this. In a country of around 800,000 inhabitants, it is estimated that this cyclone affected 345,131 people, of whom 185,000 severely. This cyclone caused important economic losses, estimated at US$ 185 million. More recently, in January 2024, Mauritius was hit by cyclone Belal. Though less devastating than Kenneth, the disaster still resulted in two deaths, and important economic damage, primarily from coastal, pluvial and riverine floodings (France 24, Abdoollah Earally, 2024). In this case, ground artificialization in Port-Louis, the capital, combined with insufficient national preparedness measures acted as aggravating factors. Both in Mauritius and neighbouring La Réunion, a French overseas territory also struck by Belal, numerous households lost electricity, while many experienced severe restrictions or complete disruptions to their water supply (PIROI centre Croix Rouge Française, 2024). Generally, such hazards profoundly disrupt infrastructure and service delivery, while destroying homes and businesses. Their direct and collateral effects exacerbate socioeconomic vulnerabilities, often triggering involuntary population displacement.

In almost all African SIDS, landslides are another threat to human settlements, causing houses to collapse, especially in the most vulnerable areas. Typically initiated by intense rainfalls and/or land erosion, these events are often amplified by human activities and governance gaps, especially in informal settlements. In Comoros, Mauritius and São Tomé and Príncipe, inappropriate construction on deforested sloping and high-risk areas has frequently ended with tragic consequences for communities. Because they often derive from the intersection of anthropogenic and climatic factors, landslides exemplify the complex interplay between natural hazards, human settlements and environmental conditions in African SIDS.

Beyond the immediate human and economic losses at household or city levels, climate change and natural hazards inflict substantial collateral damage on national economies by disrupting market access and diminishing tourism appeal. Through their impact on natural environments, these forces similarly compromise agriculture and food production, with potentially devastating consequences for food security. The exceptional biodiversity found across African SIDS represents a critical asset for tourism, commercial agriculture and fisheries activities, and local food supply. Therefore, preserving natural resources from hazards, climate-change and the negative impacts

Figure 2. Landslides resulting from erosion in Bubaque, Guinea-Bissau

Source: UN-Habitat (2020)

of direct human activities (such as deforestation or pollution) constitutes both a humanitarian and economic imperative.

This preservation effort also carries profound environmental significance, as SIDS have unique and fragile ecosystemic balances that grant their ecological functioning and protection against certain natural phenomena. They host endemic species found nowhere else on Earth, many of which play crucial roles in keeping the environment safe from other invasive biomes and preserving the good health of the soils.

Lack of capacity as an exacerbating factor of climate and hazards risks

Nevertheless, exposure is not the only factor responsible for the climate vulnerability experienced by African SIDS. Comparison with other state categories reveals that the heightened vulnerability of these six SIDS also stems from more pronounced deficiencies in financial and technical capacities.

The World Risk Index is a statistical framework created and monitored by Bündnis Entwicklung Hilft and the Institute for International Law of Peace and Armed Conflict (IFHV) of the Ruhr-University Bochum. This tool aims to measure latent risks of humanitarian disasters resulting from conflicts, extreme natural events and climate change impacts. The 2024 report encompasses assessments of 193 countries, including the six African SIDS (see Tables 4 and 5).

Examining their overall World Risk Index scores reveals a certain diversity among African SIDS. From very low index values in Cabo Verde and São Tomé and Príncipe, medium scores can be observed in Guinea-Bissau and Mauritius. Notably, even the highest score among African SIDS falls within the medium range of the World Risk Index spectrum. Contrary to the presumption that these nations might face disproportionate risk exposure, the data indicates that African SIDS maintain relatively moderate "exposure" ratings, with Seychelles recording the maximum value in this category (1.03). These findings may partially reflect the weight assigned to conflict criteria within the World Risk Index methodology.

On the other hand, African SIDS consistently record high to very high scores on the "lack of adaptive capacities" indicator, assessing components such as research, education, long-term health and deprivation effects, and investment capacities. They similarly demonstrate elevated or medium scores for the "lack of coping capacities" indicator, which takes into account the recent societal shocks (population affected by natural disasters or conflicts), the level of governance (corruption, political stability), and health care capacities. "Susceptibility", an indicator encompassing socioeconomic factors like development, deprivation and disparities,

Table 4. World Risk Index indicators for African SIDS.

	W	E	V	S	C	A
Indicators and their sub-categories	World Risk Index	Exposure	Vulnerability	Susceptibility	Lack of Coping Capacities	Lack of Adaptive Capacities
Cabo Verde	1.17	0.07	19.71	14.92	10.73	47.84
Comoros	2.68	0.33	21.72	12.51	14.5	56.51
Guinea-Bissau	3.55	0.67	18.84	14.1	7.04	67.37
Mauritius	3.58	0.73	17.59	13.4	9.6	42.3
STP	0.67	0.02	22.26	16.56	12.79	52.07
Seychelles	2.57	1.03	6.39	4.25	2.38	25.81

Source: Bündnis Entwicklung Hilft, IFHV, 2024

Table 5. World Risk Index 2024, reference table.

Classification		WorldRiskIndex	Exposure	Vulnerability	Susceptibility	Lack of Coping Capacities	Lack of Adaptive Capacities
very low		0.00 – 1.84	0.00 – 0.17	0.00 – 9.90	0.00 – 7.17	0.00 – 3.47	0.00 – 25.2
low		1.85 – 3.20	0.18 – 0.56	9.91 – 15.87	7.18 – 11.85	3.48 – 10.01	25.29 – 37.4
medium		3.21 – 5.87	0.57 – 1.76	15.88 – 24.43	11.86 – 19.31	10.02 – 12.64	37.48 – 48.0
high		5.88 – 12.88	1.77 – 7.78	24.44 – 33.01	19.32 – 34.16	12.65 – 39.05	48.05 – 59.0
very high		12.89 – 100.00	7.79 – 100.00	33.02 – 100.00	34.17 – 100.00	39.06 – 100.00	59.01 – 100.0

e 2022 the WorldRiskIndex and its elements will use fixed thresholds for the classification of countries to enable medium- and long-term trends analyses. These threshold values for the WorldRiskI
dimension were calculated as the median of the quintiles from the results of the last 20 years.

vulnerability to violence, conflicts, and diseases, shows relatively uniform medium scores across most African SIDS, with Seychelles as the exception (recording lower values). Comprising the three dimensions of "susceptibility", "lack of coping capacities", and "lack of adaptive capacities", the "vulnerability" category "maps the capacities and dispositions of people, households, and societies and indicates how easily and to what degree they can be destabilized, damaged, or even destroyed by extreme events" (Bündnis Entwicklung Hilft, IFHV, 2023). Based on their relatively high scores across these three indicators, African SIDS, with the exception of Seychelles (lower), exhibit medium to high vulnerability index ratings.

Analysing this differentiated set of indicators is insightful as it demonstrates that African SIDS -with the exception of Seychelles- are distinguished more by their vulnerability to hazards and climate-related risks than by their actual exposure to such threats. The data suggests that the lack of institutional capacity, combined with existing socioeconomic gaps, significantly influence the risk profiles of these countries. Except for Seychelles, whose exposure is higher and vulnerability lower than the other five countries, socioeconomic and institutional exacerbating factors appear to account substantially for the climate change vulnerability observed across African SIDS. Without minimizing the genuine exposure of African SIDS to climate hazards and natural disasters, this observation offers a potential pathway forward. Strengthening the technical and institutional capacities of governments and other key stakeholders in resilience building, climate adaptation, and disaster risk management could thus contribute to reducing vulnerability across African SIDS.

The COVID-19 pandemic exacerbated and mirrored vulnerabilities in African SIDS

Despite limited health impact, COVID-19 resonated sharply in African SIDS, exacerbating existing gaps and vulnerabilities. Like in other SIDS regions (UN-Habitat, 2025), the event of the pandemic mirrored the negative impacts of external shocks on SIDS populations, economies, and governance systems, including hazards and other climate-related crises. Drawing on lessons from the pandemic and post-pandemic period offers valuable insights for addressing SIDS vulnerabilities more systematically.

Apart from Cabo Verde, where the case rate exceeded the global average, the virus itself had limited health impacts in African SIDS, compared to other groups of states. Like most SIDS at the global scale, however, African SIDS were particularly affected by the collateral impacts of the COVID-19 pandemic. Global lockdown and social distancing requirements, combined with disruptions to tourism, international trade, and cross-border exchanges had dramatic consequences in the six countries, with sometimes long-lasting effects. In Seychelles, GDP decline in 2020 was estimated 10.7 per cent, above the estimated global average for SIDS of 9 per cent decline (AfDB, 2021). According to the OECD (2021), SIDS vulnerability to the post-COVID economic crisis can be interpreted as the result of a global contraction in two sectors that are crucial for SIDS economies: tourism and fisheries. In the case of Seychelles, again, decline in the added value of tourism industries was estimated 60 per cent in 2020, against 18 per cent for the fisheries sector (AfDB, 2021).

High fiscal deficits have also been an aggravating factor in SIDS, even though exceptional debt relief mechanisms implemented during COVID-19 attenuated their additional effects. All African SIDS benefitted from the International Monetary Fund's (IMF) COVID-19 Financial Assistance and Debt Service Relief, and G20's Debt Service Suspension Initiative (DSSI) was implemented in Cabo Verde, Guinea-Bissau, São Tomé and Príncipe and Comoros (World Bank, 2022).

Still, COVID-19 economic spin-offs in African SIDS remained important, leading to a profound impact on social conditions and livelihoods. Overall, the pandemic acted as an aggravating factor for existing vulnerabilities, including socioeconomic and climate. Lockdown measures and global trade interruptions had a direct impact on sectors like education, food security, gender equity and access to basic services.

In some cases, the COVID-19 crisis cumulated with other massive shocks, resulting in a multi-crisis situation. In Comoros, the period of the emergence and spread of the pandemic was also marked by the dramatic event of cyclone Kenneth, one of the most devastating in the archipelago's history. Apart from the more than 17,000 people injured, 11,000 displaced, and the estimated US$185.4 million worth of loss and damage, this cyclone caused massive disruption in key areas of public service delivery. The conjunction of this disaster with the COVID-19 crisis was thus particularly dramatic for the population, especially the most vulnerable groups. According to a study led by the National Institute for Statistics, Economic and Demographic Studies (INSEED, French acronym) 77 per cent of households reported adverse impacts on livelihoods in April 2020, and 54 per cent reported loss of over 40 per cent of labour income. Sectors like construction (60 per cent loss), and agriculture or fishing (over 48 per cent loss) were particularly affected, but the worst impact was for the overall informal sector, with estimated losses ranging between 70 and 80 per cent (Soulé Youssouf, 2021). In a country where about 20 per cent of the GDP usually comes from cash transfers from the diaspora (Halidi, 2023), the lockdown and disruption of economic activities abroad also had a direct impact on livelihoods. Even when solidarity remained high – if not higher (Halidi, 2023; IMF, 2024)- economic difficulties faced during the pandemic by their relatives in France or other countries led to a reduction of families' budget in Comoros, increasing socioeconomic vulnerability.

Overall, COVID-19 revealed the vulnerability of African SIDS economies and societies to external shocks, especially highlighting the risk for a combination with other hazard-related events or climate disasters, under a 'multiple crises' scenario (Bündnis Entwicklung Hilft, IFHV, 2024).

Socioeconomic challenges exacerbating climate vulnerability in African SIDS

African SIDS are clearly exposed to hazards and disproportionately hit by the negative effects of climate change. However, exposure alone does not fully explain the intensity of the challenges they face or their heightened sensitivity to shocks and stresses, as seen during and after the COVID-19 pandemic. Understanding the root causes of their acute vulnerability analysing the social and economic gaps hindering their sustainable and resilient development, including their translation into urbanization challenges. These same social and economic challenges in SIDS' human settlements are further exacerbated by natural hazards, particularly in contexts where disasters strike repeatedly. Breaking the cycles of vulnerability requires a deeper understanding of their dynamics and the development of integrated solutions that address all contributing factors.

Economic challenges

Despite their diversity in terms of wealth and opportunities, African SIDS share common economic challenges that increase their vulnerability to shocks and stresses. Although rich in unique biodiversity that enables the cultivation of specific species and supports tourism, the six countries still face significant barriers to sustainable economic development - many of which stem from the intrinsic characteristics described in the first section.

For instance, limited land availability restricts opportunities for productive activities. Agricultural activities and industry require a minimum amount of space that can be difficult to find in SIDS, partly because of their boundedness, but also due to the previously mentioned narrow stretches of arable land between the coast and mountainous topography. Based on this, SIDS remain highly dependent on imports for their food and basic commodity. However, their remoteness and insular nature also make foreign products more expensive to SIDS consumers, leading to unbalanced trade systems, and economic models difficult to sustain. Families are often the ones endorsing the extra (and unstable)-costs of this dependency on international markets, making livelihoods even more precarious, especially in communities affected by unemployment and climate risks.

Overall, the dominant economic sectors in African SIDS remain the primary sector, spanning agriculture and fishing, and the services sector, especially tourism, and finance, in the case of Mauritius. For instance, primary sector activities represent the main source of income in Guinea-Bissau and Comoros. In the latter, specific meteorological conditions make it possible to grow relatively rare products, like Vanilla and Ylang-ylang, granting the country a niche in international markets. In this or other cases, small-scale production linked with biodiversity and endemic ecosystems, such as agroforestry, can bring income solutions at the local level. They can also contribute positively to local communities' supply in quality food products and other important commodities. This type of activity requires a careful and sustainable use of natural resources, to ensure the preservation of ecosystems in the long run. Ocean-related activities, like sea-fishing and blue economy in general, offer good alternatives as well, especially considering the previously mentioned scarcity of land issue. According to the OECD, marine resources in SIDS could constitute a "driver of economic diversification, resilience and inclusive development" (OECD, 2021).

In the four other African SIDS, the services sector is the one that ensures the biggest percentage of Gross Domestic Product (GDP). Tourism, especially, is a major source of income for Seychelles, Cabo Verde and São Tomé and Príncipe. In Mauritius, it is rather the finance sector, although tourism remains important. But even when tourism flows do contribute to the economy of African SIDS, their potential in terms of tourism is not always fully taken advantage of. Despite the beauty of their natural ecosystems, appropriate infrastructure is sometimes insufficient to make tourism hotspots accessible, safe, and profitable for the country and local communities. Protecting the ecosystems in a way that ensures their sustainability in the long run is also a challenge. Famous beaches in several African SIDS have seen their sand taken away for construction purposes, hindering their tourism appeal. Finally, economic dependence on tourism alone has proven to be risky, especially in times of crisis. The following table illustrates the quantitative impact of COVID-19 on the sector of tourism in the six countries.

Table 6. Quantitative impact of COVID-19 on the tourism sector on African SIDS.

International tourism, receipts (% of total exports)	2016	2017	2018	2019	2020
Cabo Verde	55.49	56.69	53.96	56.40	39.93
Comoros	46.72	47.27	49.33	51.12	26.84
Guinea-Bissau	N/A	4.38	5.26	6.48	N/A
Mauritius	35.07	37.19	38.69	38.49	16.77
São Tomé and Príncipe	71.56	71.51	73.19	N/A	N/A
Seychelles	31.60	31.38	28.48	29.65	18.39

Source: World Bank, 2025f

As illustrated by the last column of this table, COVID-19 had a severe financial impact in the tourism sector, and beyond. Qualitative impact was equally noticeable, and the pandemic provoked long-lasting effects on local and national economies, with increased unemployment and poverty. In Seychelles, an upper middle-income country, the losses were soon compensated by a significant rebound in GDP. But full recovery is taking longer in the more fragile economies of Cabo Verde and São Tomé and Príncipe. The need to diversify SIDS economies and reduce their dependence on tourism is therefore among the key lessons learned from COVID-19. Strengthening their economies in a diversified and inclusive way will help SIDS move forward on the path towards resilience and sustainability.

Overall, SIDS economic dependence on global markets represents an additional threat to their socioeconomic stability and thus, to their capacity to face external shocks and the consequences of climate change.

Social challenges

African SIDS are confronted with important social challenges that exacerbate their vulnerability to economic shocks and climate change. One such challenge is that of rapid demographic change in contexts of space limitations and unequal distribution of resources. While high birth rates create pressure on limited resources, the inequitable distribution of these resources further exacerbates both climate and social vulnerabilities.

In addition to this, most states show a high proportion of youth in their population. In São Tomé and Príncipe, the average age of the population in 2017 was 20 years old (São Tomé and Príncipe, Instituto Nacional de Estatística, 2017), and 53 per cent of the population was under 20 in Comoros in 2024 (World Bank, 2025g). Having a more youthful population poses important challenges, especially regarding limited access to education, and absence of job opportunities. The high rate of youth unemployment is a significant issue in most African SIDS, triggering a broader exclusion of youth from economic development and opportunities. As illustrated in the region of the horn of Africa, high unemployment rates among youth can also act as a catalyst for violence and crime (UNDP, 2023). In the long run, if the birth ratio was to slow down, economically supporting the "baby-boom" generations turned into elder populations would also be a huge challenge for any social or health policy. Developing robust and adaptive social protection systems in African SIDS is therefore an urgent need to achieve sustainable development in the medium and long term, leaving no one behind.

Overall, poverty and limited access to opportunities are real bottlenecks in Comoros, Guinea-Bissau and São Tomé and Príncipe. In Mauritius and Seychelles, poverty levels are lower than in other African SIDS, but inequalities remain significant. The economically disadvantaged groups are often entrenched in pockets of poverty, with limited access to basic services and job opportunities. In both countries, as much as in Cabo Verde, Comoros, Guinea-Bissau or São Tomé and Príncipe, informal settlements often constitute the only housing solution that poor families can afford.

Combined with governance challenges and sometimes the absence of a land register, the existence and growth of these informal settlements also increase climate vulnerability at a city scale, with communities experiencing insufficient service provision and inadequate living conditions. In several African SIDS, access to basic services is a real issue: in Guinea-Bissau, only 33.3 per cent of the population had access to electricity in 2020, and 12 per cent to sanitation facilities (UN-Habitat, 2023c). Access to health care and facilities is often insufficient as well, especially in countries affected by tropical diseases like malaria, typhoid and cholera. Although African SIDS were not among the hardest hit by COVID-19 in terms of infection or mortality rates, limited healthcare infrastructure posed serious challenges for those affected — as did disruptions in vaccine distribution.

Among the major social challenges that African SIDS are facing, access to education also remains an important issue. Although quantitative data remains scarce on this topic – as it also does with multiple other SDGs-related topics (Hillbom, Palacio, Tegunimataka, 2023) – the COVID-19 crisis revealed the high vulnerability of educational systems in African SIDS. In the absence of adequate infrastructure and emergency measures to ensure educational continuity during the pandemic, thousands of kids remained out of school for months, accumulating important delays in the completion of their studies. Here, the visible consequences of the pandemic shed light on phenomena that are unfortunately much more recurrent in SIDS. In states such as Comoros or Sao Tomé and Príncipe, natural and climatic hazards, even seasonal ones, often lead to the same effects over sometimes extended periods. In Sao Tomé and Príncipe, elementary schools located in rural areas often close on rainy days - if only because of the absence of resilient roads, or of windows blocking the entry of water into classrooms. In Comoros, Cyclone Kenneth, which hit at the same time as COVID-19, is said to have led to the destruction of about 38 per cent of school rooms in the country. A lack of resilient education is thus an important bottleneck in African SIDS, hindering the potential of new generations and sometimes even threatening the lives of schoolchildren.

Leaving the resilience issue aside, the scarcity of universities and higher education facilities is also a constraint in African SIDS. On the one hand, the impact on educational pathways and deepening inequalities between those who can and cannot travel for education purposes exacerbates social gaps. On the other hand, the reduced access to higher education in crucial sectors for the countries' future, such as public administration or economy, prevents the formation of qualified elites among the new generations. Both equipped with multiple universities, Mauritius and Seychelles might be considered as exceptions to this -even if remoteness remains an obstacle to the full development of their educational offer.

Unique urban patterns and unplanned development

Due to their specific context and localization, coastal and non-coastal human settlements in SIDS are more vulnerable than most continental cities. Urbanization patterns in SIDS are influenced by numerous geographical constraints, such as the presence of the sea, rivers, wetlands, mountains and active volcanos. Due to the limited space available, and to the demographic pressure, SIDS human settlements have no choice but to

Figure 3. The dense city of Mutsamudu, Comoros, surrounded by nature.

Source: UN-Habitat, 2023

maintain a close proximity with these natural or topographical elements, notwithstanding the threats that this vicinity involves.

In some cases, this vicinity is actively cultivated. Fisheries and other blue economy activities play a key role in sustaining livelihoods in SIDS, making the coastal zones strategic and attractive spaces for rural communities, despite the threats posed by sea-level rise and flooding. In a 2015 census realized in Seychelles, nearly 30 per cent of the total population resided in areas where the elevation was below 5 meters (World Bank, 2025h).

A common trade-off for insular cities is to develop along narrow land corridors, flanked by the sea on one side and steep hills or mountains on the other. These unique natural and topographical conditions result in highly contrasting land use patterns, from very dense urban cores to widely scattered and remote rural settlements.

In the former case, Mauritius and Comoros rank among the countries with the densest urban areas in Sub-Saharan Africa (World Bank, Combes et al., 2023). Their capital cities, Port Louis and Moroni, illustrate how constrained urban development can lead human

Figure 4. Pajé - Mutsamudu, Comoros

UN-Habitat, 2023

settlements to grow very densely. Moroni, in fact, records the highest urban core density in the region, with 15,246 inhabitants per km² -nearly double that of Nigeria, which ranks second with 8,241 inhabitants per km² (World Bank, Combes et al., 2023). However, this density comes with significant drawbacks. In Moroni's Médina -the historic city center- limited space has hindered the construction of resilient infrastructure, including drainage systems for flood prevention. The narrow alleys between houses further restrict access for emergency services, such as ambulances or fire trucks, exacerbating residents' vulnerability during crises.

Conversely, in areas where population density remains low and urbanization extends into rural and scattered communities -whether inland or along coastlines- natural hazards persist as a constant threat, while resilient infrastructure remains scarce. Therefore, the expanding settlements become isolated hotspots vulnerable to hazardous events. In São Tomé and Príncipe, despite an urbanization rate exceeding 75 percent, the average urban area measures just 2.2 km² (World Bank, Combes et al., 2023). Outside the capital city of São Tomé, which houses a significant portion of the country's population, residents are distributed across small towns, and numerous inland and fishing villages situated near beaches and rivers. These communities face increasing exposure to flood risks, due to a combination of sea-level rise, erosion, and intensifying precipitation patterns that cause rivers to swell and overflow. Local authorities, constrained by limited financial capacity, struggle to respond effectively to the dispersed and costly infrastructure needs of these settlements.

Overall, the scarcity of suitable land for urbanization represents a critical challenge in African SIDS, where demographic pressures increasingly strain both human settlements and ecosystems. When combined with land speculation, this situation can also result in excessive land valorization, transforming access to formal, decent housing into a privilege that remains beyond the reach of the poorest groups.

A direct consequence of this phenomenon – and a major urbanization challenge across all African SIDS- is the presence and growth of informal settlements. These represent a double challenge for local and national authorities.

On the one hand, these informal settlements typically emerge in areas highly prone to natural hazards and exposed to extreme weather events, compounding environmental vulnerabilities with the existing socioeconomic vulnerabilities of their inhabitants. In Comoros, where informal settlements represent a common housing solution, over half of the population lives in areas presenting a high exposure to risk (UN-Habitat, 2023b). Anthropogenic factors such as deforestation and inadequate or nonexistent solid waste management exacerbate climate and disaster risks, with flooding being particularly problematic across African SIDS.

On the other hand, the uncontrolled spread of urbanization poses a real threat to the unique and often fragile island ecosystems. Settlements developing in environmentally sensitive areas can accelerate land or coastal erosion while causing direct deforestation. Plastic waste and pollution induced by human activities can also have dramatic consequences for landscapes, natural resources and biodiversity, upon which tourism and livelihoods depend.

In most cases, the emergence and growth of these precarious neighbourhoods reflects not only socioeconomic challenges and affordability issues, but also significant governance gaps in urban planning and resilience strategies at both local and national levels. In Comoros, Guinea-Bissau and in São Tomé and Príncipe, outdated land registries and inadequate regulatory frameworks severely hinder urban management. Similarly, insufficient data on residential dynamics (including informal urbanization) and the absence of risk mapping undermine governments' capacity to control and inform housing practices. Without clear cadastral systems, designated land administration authorities, or delineated risk zones, individuals inevitably construct homes in unsuitable locations, exposing themselves and their communities to natural hazards. In São Tomé and Príncipe, houses built over old drainage channels cause severe disruptions in several neighbourhoods, resulting in regular and long-lasting flooding during rainy season.

Due to their complex geographical and socioeconomic realities on top of the layer of unique urbanization patterns, urban development in SIDS requires tailored approaches to enhance urban resilience to climate change. It is therefore essential for local authorities in SIDS to prioritize climate change and understand

Challenges, constraints and opportunities for strengthening urban resilience in African SIDS

03

the specific interventions required by their situation of high exposure to natural risks.

Geographic disadvantages and socioeconomic factors are important drivers of African SIDS' vulnerability to climate change and hazards. However, in the equation of risk, the institutional capacity of the state is a key variable that can partly compensate for countries' exposure to natural or climatic threats. This capacity condition is not yet met in the case of African SIDS, most of which face significant institutional, technical and financial gaps. From a policymaking perspective (either domestic or international cooperation), these gaps make it harder to directly address the most pressing socioeconomic and climatic issues triggering vulnerability. This section explores the main technical and governance bottlenecks that prevent African SIDS governments from effectively dealing with risk and ensuring the achievement of safe and resilient human settlements. At the same time, it argues that the lack of financial resources is one of the main causes of this capacity gap, and that stronger cooperation mechanisms could help reduce the climate injustice that SIDS are experiencing.

Governance constraints for resilience building

In the domestic realm, governance challenges, including institutional capacity and political gaps, pose important obstacles to the implementation of efficient policies to tackle socioeconomic and climatic vulnerabilities in African SIDS. They undermine efforts to build safer cities, especially in the context of climate change acceleration. Drawing on UN-Habitat's experience and on the contributions of diverse participatory processes led across African SIDS, this section presents a list of the common challenges facing local and national governments in these countries.

Insufficient capacity and budget distribution between national and local government bodies

Decentralization based on the principle of subsidiarity is identified in the New Urban Agenda as a key step to ensure effective urban policies at the city level (UN Conference on Housing and Sustainable Urban Development, 2016). In several African SIDS, however, the distribution of functions and budgets between national and local government bodies remains insufficient, with the main resources being concentrated at the national level. Finance and budgetary transfers from the national to the municipal or regional authorities are particularly important to support local development. In Comoros, São Tomé and Príncipe, Guinea-Bissau, and Cabo Verde, local entities lack human and material resources at the municipal level to effectively manage urban interventions and implement climate action. In the case of São Tomé and Príncipe, the specific status of the Autonomous Region of Príncipe is both a strength and a weakness: it allows for more rapid and tailored decision-making, but at the same time leads to the exclusion of the Príncipe Island from certain national programmes, preventing it from receiving any support at all. A similar situation applies to Comoros for the islands of Anjouan and Mohéli. In both countries, the fragmentation of the state into separate islands and the isolation of certain provinces reinforce the challenge of administrative unity.

In some cases, political instability adds another difficulty, and the excessive rotation of governmental staff prevents local authorities from achieving long-term planning and policies.

Capacity challenges hindering resilient policymaking

African SIDS face specific governance challenges that can hinder effective resilience planning and the implementation of adaptation plans as well as disaster risk management measures. These constraints manifest primarily in two interconnected dimensions: limited technical expertise in the urban and climate fields and their intersection; and resource allocation challenges. Both are primarily exacerbated at the local scale but can also exist at the national scale.

Limited technical capacity in urban resilience planning is evident in several areas: limited specialized knowledge regarding climate science and environmental or urban systems; insufficient technical expertise in planning processes, particularly those incorporating climate change issues and threats; and gaps in risk assessment, including data collection and analysis, and risk

mapping (UN-Habitat, DiMSUR, 2022). These constraints often stem from broader limitations in the educational system and the challenges of retaining specialized expertise in small island contexts. At the local government level, these technical gaps can be exacerbated by incomplete or unclear distribution of functions between national and local government bodies, with inadequate resource allocation for the latter.

Resource allocation challenges are equally significant. The small population size of many African SIDS, combined with competing development priorities, often results in insufficient human resources dedicated to resilience planning and disaster preparation or risk management. Even when specialized expertise exists, professionals frequently manage multiple responsibilities across different sectors. The OECD (2023) documents this in São Tomé and Príncipe, where two full-time employees oversee the country's entire meteorological and hydrological monitoring systems while simultaneously acting as focal points for various UN Conventions and providing information to critical transportation infrastructure, including São Tomé's airport. Overall, the lack of human resources and technical capacity prevents SIDS' national and local authorities from implementing efficient policies and strategically planning urban resilience.

Lack of connectivity and innovative technologies

The lack of material capacity and financial resources has proven to be a constraint in SIDS, where most commodities, including basic utilities, need to be imported from outside. Limited access to technologies and the lack of connectivity are real obstacles to effective urban management and risk mitigation strategies. For example, in the field of risk mapping, geospatial data is key. Data collection and management can be significantly improved using connected tools and software, such as geospatial information systems (GIS). In the context of remote and poorly connected countries and cities, low internet signals can be an obstacle to using and downloading such software, discouraging technicians from resorting to innovative tools that would significantly improve their practice. Apart from connectivity, material resources and even access to licenses are important barriers that prevent SIDS from fully taking advantage of the potential of new technologies. In Comoros, land registers have long been outdated: digitalization constitutes a real challenge to facilitate their updating and swift use by the national and local administrations.

Weak urban and environmental regulatory frameworks

Another crucial issue observed in African SIDS is the lack of strong regulatory frameworks to govern urbanization processes and protect fragile natural ecosystems. Weak urban regulatory frameworks prevent the state from developing effective land regulations and can lead to aggravation of the negative effects of climate change and hazards on a country's economy and population, especially impacting the most vulnerable. They can also foster biodiversity loss and ecosystem degradation.

- **Inadequate Building Standards:** Weak regulations result in poorly constructed buildings and infrastructure that are more susceptible to damage or destruction during extreme weather events like floods, storms, or heatwaves. Conversely, building codes unsuited to local culture and conditions, especially in informal settlements, would be ineffective in supporting risk mitigation efforts (UN-Habitat, 2018). Ensuring that building codes are adapted to the existing conditions or remain open to byelaws in very specific areas, can help foster better construction practices in the most vulnerable areas.

- **Poor Land-Use Planning:** Without strong regulations guiding land-use planning, such as a proper land administration system and cadastral plans, urban areas in African SIDS tend to develop and expand in high-risk zones such as floodplains, coastal areas prone to erosion, and hilly areas prone to landslides. This contributes to increasing the exposure of vulnerable groups to climate-related hazards. A weak land administration system hinders the identification of land ownership, the resolution of property disputes, the facilitation of reconstruction efforts, and the equitable distribution of resources, which are all crucial conditions for an effective recovery process after disasters.

- **Low levels of formal tenure security:** The lack of formal tenure security exacerbates climate vulnerability by discouraging long-term investments and sustainable practices, particularly in informal settlements situated in high-risk areas (UN-Habitat, 2018). Insecure land tenure not only hampers adaptive measures and community resilience but also increases the susceptibility of vulnerable populations to hazards and climate-induced displacement.

In most cases, the lack or weakness of urban and environmental regulatory frameworks is coupled with a lack of effective implementation of existing laws and policies at the national and local levels. For the local level specifically, slow decentralization processes can once again be responsible for accentuating the lack of compliance with the national law or land-related administration systems. While creating policy frameworks for urban development, national governments should thus provide the resources and adequate mechanisms for their overall application but also grant adequate transfers of finance and capacity to ensure effective local implementation.

Insufficient access to climate-resilient infrastructure

A lack of adequate service provision and infrastructure is often observed in the human settlements located in SIDS, due to rapid urbanization combined with resource limitations and government capacity constraints. Nonetheless, this problem should be considered seriously and addressed, because it is likely to turn into an aggravating factor during crises or disaster times. There is a clear consensus in the literature that pre-existing inappropriate living conditions and inadequate access to basic services in a community often result in dramatic and long-lasting consequences when natural disasters take place (IPCC, 2022; UNDRR, 2022). For example, the absence of water treatment or sewage systems in informal neighbourhoods can lead to lasting floods in the case of high rainfall.

Even in planned areas, inadequate policy or infrastructure choices have dramatic consequences when a disaster occurs. Ground artificialization, the conversion of natural surfaces to impermeable artificial surfaces through urbanization, infrastructure development, and land use changes, is a good example of this. In SIDS and beyond, it can act as a significant flooding risk multiplier during intense rainfalls or flash floods, especially when combined with insufficient water evacuation systems. In Mauritius, for example, ground artificialization in Port-Louis, combined with the topography of city, exacerbated the negative effects of cyclone Belal in 2024. Water rapidly accumulated in central areas of the city, reaching up to five metres in height in certain neighbourhoods, and causing large material losses (damage to important roads, cars taken by the current, etc.).

Effective and resilient infrastructure, designed to resist the specific meteorological or geological risks that exist in every SIDS, would significantly reduce the damages and effects of climate change and hazards on the economy and livelihoods.

Lack of data on risks and climate change impacts

In many cases, a major obstacle to disaster risk reduction and adaptation planning is the absence of accurate risk mapping, attributable to a broader lack of reliable data. Effective data collection is essential to build risk-informed policies and achieve resilient urban planning. Key data collection areas for disaster risk management could include land use, meteorological patterns, and vulnerable hotspots. Long-term analyses of the effects of climate change at the country level can also foster a better understanding of risk dynamics. However, this requires significant capacity, budgeting and technology, that some governments are unable to provide.

Even when data is collected, barriers often remain in its use and management, particularly regarding risk and climate-related factors. Access to additional services such as translation or communication tools to make data accesible by domestic stakeholders or external partners can also be an obstacle. In addition, institutional silos and rigid bureaucratic routines at the governmental level may hinder the integration and analysis of available data and restrict the inclusion of relevant stakeholders in policy-making processes (OECD, 2023). In the absence of a comprehensive and inclusive risk assessment rooted in multi-

dimensional, data-driven analysis, implementing mitigation measures and resilience frameworks becomes extremely difficult.

Absence of effective disaster preparedness strategies

Finally, the above-mentioned capacity, data and infrastructure challenges negatively impact SIDS' disaster preparedness. Technical understanding regarding climate change and disaster risk often remains low, even at the government level, preventing the adoption of appropriate prevention mechanisms. Competing development priorities and budgetary issues are often an obstacle to adopting consistent resilience and disaster preparedness strategies, at the national and local levels. Enhancing the resilience of cities and communities in African SIDS will require a comprehensive set of prevention and mitigation measures, including the creation of early-warning systems, the conducting of training or disaster simulation exercises with the population and the construction of protective infrastructure to safeguard populations during hazardous events. In parallel, training and awareness-raising activities at the community level are essential to promote understanding of climate-related risks and encourage the adoption of adaptive practices that strengthen resilience.

Ways forward

To summarize, the governance constraints facing African SIDS present real obstacles to the adoption of effective measures to counter the effects of climate change and prevent crises. Based on the most striking limitations mentioned in this section, three main areas of work can be identified:

- Implement more resilient urban management, based on planning and improved understanding of territories, through risk mapping. This could also be supported by efforts to clarify and update urban and environmental standards, accompanied by a transition to digital for systems such as cadastres and maps, where these remain in physical format.
- Enhance the distribution of responsibilities and budgets between central and sub-national or federated entities, by providing mechanisms for dialogue and inclusion among various levels of governance, including communities and their representatives.
- Strengthen knowledge, governance capacities, and generate a culture of risk to encourage the adoption of effective disaster risk management measures, including more resilient infrastructure.

Figure 5. Participatory risk mapping exercise in Me-Zóchi district, São Tomé and Príncipe

Source: B. Costa do Nascimento, 2024

Financial challenges to achieving effective adaptation strategies

Vulnerabilities in African SIDS are multidimensional in nature; therefore, building resilience in their human settlements requires ambitious and cross-cutting interventions tailored to the specific risks and features encountered in each case. Such transformative initiatives demand significant funding, which national and local SIDS stakeholders critically lack, for multiple reasons. This raises the question of finance as a priority topic, challenging the way international cooperation could better assist SIDS stakeholders in their efforts to adopt climate adaptation measures and strategies.

Financial challenges to achieving effective adaptation strategies

Due to their remoteness, development projects in SIDS often have high implementation and monitoring costs. Apart from the higher costs associated with material needs and expenses for housing and infrastructure building initiatives, limited local human resources often result in higher costs for delivering and managing projects, even for low-cost activities such as capacity building.

Given the economic and budget challenges they are facing, SIDS governments themselves are often unable to cover the colossal expenses entailed by transformative projects targeting risk mitigation and resilience. Furthermore, national and local authorities need to cope with a situation where disasters keep occurring frequently. In most cases, they can only focus on disaster response or recovery, when financing for natural disasters should encompass both post-disaster response and disaster preparedness to expedite investments in enhancing resilience.

For all these reasons, external finance solutions are critical to the consolidation of resilience in SIDS. Access to adequate funding sources could also help SIDS governments scale up existing solutions, and foster cross-cutting climate adaptation initiatives, with positive impacts on social, economic and environmental aspects. However, as this section will demonstrate, serious obstacles hinder the access to such funding opportunities for African SIDS.

Limited fundraising capacities

In recent decades, increasing awareness of climate-change issues and dynamics at the global scale has also resulted in the creation of several mechanisms and funds to leverage green and climate international cooperation. Several UN and non-UN initiatives have emerged, like the Green Climate Fund or the Adaptation Fund, to finance important projects and initiatives in developing and developed countries affected by climate issues.

Politically, SIDS from all over the planet have also been able to collectively advocate for specific financial compensations for their disproportionate share of climate change impacts, compared to their smaller contribution as polluters.

At a more individual and practical scale, however, the lack of fundraising capacities continues to be a severe obstacle, preventing their governments from accessing external funding opportunities, including available multilateral climate funds. Securing international funding to support climate and adaptation policies often requires the fulfilment of a series of conditions and navigating complex application forms and processes. In countries affected by important institutional gaps and a lack of human resources, coping with this kind of procedure is usually impossible, except with the support of international agencies.

Among the six African SIDS, however, Mauritius and Seychelles stand out for their increased ability to mobilize creative sources of funding on the international scene. Through its 'Smart Cities' program, Mauritius has succeeded in attracting international private funding to contribute to the sustainable development of its cities. Likewise, the Republic of Seychelles has been a pioneer in using debt-swap mechanisms to redirect debt payments into impactful climate initiatives on its own territory. The Seychelles Conservation and Climate Adaptation Trust (SeyCCAT) created for this purpose has become a major stakeholder in the conservation of marine protected areas throughout the archipelago.

While these two insular nations have managed to develop fundraising skills to support their adaptation policies, access to international climate finance through self-application remains a real challenge for most African SIDS.

Limited access to international funding opportunities

In addition to this, access to bilateral funding through official development assistance (ODA) and cooperation in general, has proven to be a complex issue for SIDS, and all the more so for African SIDS.

Academic literature on international cooperation shows that these states are frequently exposed to the phenomenon of donor herding (OECD, 2023; Weiler and Kloeck, 2021). This concept designates the tendency of international donors to orient their funding and attention to states where other funding entities are present, in order to maximize the outcomes of their interventions and because more information is available on these states. Therefore, if some SIDS manage to attract donors and concentrate multiple funding opportunities, others find themselves facing a lack of resources.

Historic, cultural and geopolitical ties also play a significant role, and orient donors' concessional financing to their geographically or geopolitically closest partners, rather than to those most in need (UNDESA, UNDRR, AOSIS, 2023). This phenomenon can be exacerbated by the fact that SIDS have scarce diplomatic representation, both of themselves abroad, and of foreign countries on their territory. The OECD report (2023) gives the example of Comoros and São Tomé and Príncipe, who only have representation from one European country (also representing the European Union) on their territories, respectively France and Portugal.

Despite their high vulnerability to climate change, access to climate-related ODA remains insufficient in most SIDS, especially in African contexts. OECD (2023) figures show that Atlantic and Indian Ocean SIDS receive a much smaller percentage of climate-related ODA, compared to Caribbean and Pacific SIDS. This remains true for direct climate-related and for climate-related capacity development ODA flows.

Additionally, regarding their level of income, some African SIDS have surpassed the threshold imposed by OECD-DAC rules to access ODA. Seychelles is in this situation; the country has ceased to be an ODA recipient since 2018. It could still benefit from ODA funds as part of a regional programme, targeting other ODA recipients among its close neighbours (Comoros or Madagascar, for instance).

African SIDS, a "no-region" for donors

Another important challenge for African SIDS is that due to their distant geographical locations, donors and international agencies classify them into different regional portfolios, reducing the chances to find common funding opportunities for all six of them. This lack of unity is a real obstacle to finding common solutions for shared issues, such as plastic pollution, or the consequences of sea-level rise. Creating tailored SIDS portfolios in UN and other national development agencies could be instrumental in scaling up cooperation efforts and finance opportunities for these states.

Opportunities from international cooperation and existing regional efforts

Fortunately, some mechanisms already exist at the global and regional level, that offer ways forward to address the governance and finance gaps highlighted in this section. Throughout the past decades, the emergence or consolidation of international agreements, frameworks and coalitions has played a crucial role in raising awareness of SIDS issues. These normative and organizational milestones have been critical in positively shaping cooperation

Global frameworks on climate change, disaster risk management and sustainable development

Table 7. Global Frameworks on climate change, disaster risk management and sustainable development.

Title	Description, objective and impact for African SIDS
Sendai Framework for Disaster Risk Reduction (2015)	Adopted in 2015, it provides a set of global targets and overall guidance to help nations understand, manage, and reduce disaster risks. The Sendai Framework places special emphasis on the need to strengthen resilience at all levels of governance. It recognises that SIDS have unique vulnerabilities and supports the implementation of the SAMOA Pathway (see below) in order to minimize the impacts of natural hazards and climate change.
Paris Agreement (2015)	Adopted in 2015 at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21), it is a legally binding international treaty to guide policy action towards limiting the acceleration of climate change. It acknowledges the special circumstances of SIDS regarding climate change and the need to achieve efficient adaptation and mitigation strategies. With the creation of the Green Climate Fund (GCF), the Paris Agreement also opened finance opportunities for the nations most vulnerable to the negative impacts of climate change, including SIDS.
2030 Sustainable Development Agenda (2015)	At the global level, the 2030 Sustainable Development Agenda offers concrete ways of tackling climate change impacts through the implementation of 17 Sustainable Development Goals (SDG). Some SDGs are directly linked to urban resilience, such as SDG 11 on sustainable cities and communities, and SDG 13 on combatting climate change impacts. Many others have strong connections to this topic as well and take into account some of the striking challenges faced by SIDS, like poverty (SDG 1), access to clean water and sanitation (SDG 6), and others. Overall, the 2030 Sustainable Development Agenda provides essential guidelines to bridge the gaps that prevent communities from achieving just, green and resilient livelihoods worldwide.
Others	Other frameworks and organizations, such as the United Nations Framework Convention on Climate Change (UNFCCC)) and the Intergovernmental Panel on Climate Change (IPCC) provide useful guidelines to combat the negative effects of climate change from an international cooperation perspective. The latter has consistently highlighted the unique vulnerabilities of SIDS in its assessment reports. The Addis-Ababa Action Agenda, adopted at the Third International Conference on Financing for Development in 2015, also provides crucial inputs to foster financing solutions and mechanisms for sustainable development.

practices, as well as domestic agenda setting. Regional and multilateral initiatives are of significant interest to support resilience consolidation in SIDS, enhancing technical, governance and finance solutions to support the implementation of substantive risk mitigation and adaptation policies.

At the multilateral level, other global frameworks provide specific guidelines to support climate change adaptation and resilient development focusing on SIDS.

Table 8. Global frameworks focusing on Small Island Developing States

Framework/Organization	Description, objective and impact for African SIDS
SAMOA Pathway	Adopted in 2014 during the Third International Conference on SIDS, the SAMOA Pathway provides crucial support and guidance. With an emphasis on mitigating the effects of climate change, this text outlines concrete modalities to support development in SIDS, including sustainable economic growth, climate adaptation, renewable energy, disaster risk reduction, and sustainable use of marine resources. It acknowledges the specific challenges that SIDS face regarding urbanization and encourages the construction of resilient and sustainable urban environments capable of withstanding hazards and climate-related issues.
UN-OHRLLS	In the multilateral system, SIDS have been represented since 2001 by a dedicated unit of the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS). This organization has played an active role in articulating international action for SIDS, promoting the SAMOA Pathway on the multilateral scene, and raising awareness of the specific challenges posed to these states.
AOSIS	The Alliance of Small Island States (AOSIS) amplifies SIDS' collective voice in international negotiations on climate change and sustainable development frameworks. This intergovernmental organization was created in 1990.

Regional frameworks for the African SIDS

At the regional level, the African Island States Climate Commission (AISCC) was created in 2016, after COP22 in Marrakech. Under the presidency of the Union of Seychelles, it brings together the six SIDS mentioned in this paper, plus Equatorial Guinea, Madagascar and the United Republic of Tanzania. The AISCC was established with the aim of advancing dialogue on the specific climate challenges faced by insular or partially insular states in Africa. Still in the process of being institutionalised, the AISCC has no concrete achievements to its credit, but held its second technical meeting in 2023.

Apart from this emerging regional platform, the African Union possesses two main levers for strengthening climate adaptation and disaster risk reduction in SIDS. One is the African Union Strategy for Disaster Risk Reduction (2022-2030) that aligns with the Sendai Framework and includes provisions specifically targeting African SIDS' unique vulnerabilities to sea-level rise, tropical cyclones, and coastal erosion. The other is the African Risk Capacity (ARC): a specialized agency that helps African countries, including SIDS, to better prepare for and respond to extreme weather events.

In addition to the African Union, sub-regional organizations have also placed an increasing emphasis on SIDS climate and resilience challenges. Among the most active and specific, the Indian Ocean Commission (IOC) was created in 1982 to foster cooperation and promote sustainable development among the islands of the Indian Ocean region. Including Comoros, Mauritius and Seychelles among its member states, together with Madagascar and La Réunion (an overseas department of France), the IOC has been involved in several key areas that relate to climate resilience and sustainable development, such as the protection of ecosystems, the sustainable management of natural resources, entrepreneurship and promotion of renewable energy. The organization's strategy is aligned with the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean Region, informally called the Nairobi Convention, first established in 1985, and hosted by the United Nations Environment Programme (UNEP). In recent years, the IOC has extended its activities and partnerships to other SIDS, including the Atlantic African SIDS.

Incorporating three SIDS and a total of four island nations among its members, the Southern African Development Community (SADC) has also demonstrated a growing concern for climate challenges in SIDS. Its Disaster Risk Reduction Unit has been created to provide support to member states through capacity building, technical assistance and coordination of regional disaster preparedness and response efforts.

Both the IOC and the SADC are board members of the Disaster Risk Management, Sustainability and Urban Practice (DiMSUR), a sub-regional centre for disaster risk management, sustainability and urban resilience in Southern Africa. The centre provides technical assistance to its founding members, Comoros, Madagascar, Malawi and Mozambique, encouraging South-South cooperation regarding climate adaptation and disaster risk management solutions.

Other regional bodies like the Economic Community of West African States (ECOWAS) and the Economic Community of Central African States (ECCAS) provide technical support to their member SIDS, respectively Cabo Verde and Guinea-Bissau for the first, and São Tomé and Príncipe for the latter.

Overall, South-South cooperation stands as a promising way forward to bridge capacity gaps in the field of resilience building and disaster risk management. Considering that hazards transcend national boundaries, and that neighbouring countries can be affected by the same disasters – or suffer collateral damage from a neighbour's collapse – technical cooperation is very relevant at a regional or sub-regional level. Peer-learning processes and knowledge circulation channels should especially be encouraged to help governments improve their capacity to anticipate and mitigate shared meteorological risks, like cyclones in the Southern Indian Ocean Region and the Mozambique Channel. This technical South-South or regional cooperation can sometimes be supported by Northern donors, through triangular cooperation. For example, in the Indian Ocean region, the European Union and the French Development Agency (AFD), funded an initiative carried out by the IOC to support meteorological and hazard-related data collection and management1.

Strengthening urban resilience, climate adaptation, and disaster risk management: lessons learned from and for African SIDS

04

This report has demonstrated that African SIDS' vulnerability to climate change, hazards and shocks results from a complex interlinkage of inherent SIDS characteristics combined with hazard exposure, socioeconomic issues and other structural limitations, including governance challenges and finance gaps. Overcoming these difficulties to effectively consolidate resilience, climate adaptation and disaster risk management therefore requires the implementation of integrated approaches, rooted in comprehensive vulnerability diagnostics and supported by effective funding mechanisms.

Drawing on the experience of UN-Habitat and its grassroot, local, national, international civil society and private partners, this section introduces nine approaches that have made significant contributions to strengthening resilience in the cities and human settlements of African SIDS. Addressing some of the most pressing challenges previously identified these selected approaches represent only some of the possible pathways towards climate adaptation and effective risk management. The boxes containing concrete case studies illustrate how they have already proven successful in broader policy or project contexts, at multiple levels of governance. Tailoring these solutions to the specificities of each context, combining them together, or with other relevant methodologies – including grassroot and indigenous practices – and scaling them up for extended benefits will constitute key challenges to achieving positive impact at a national scale and beyond.

Capacity building at the local level to strengthen urban resilience

Since constraints in government capacity are among the most striking challenges faced by SIDS in achieving sustainable development and resilience, important efforts need to be undertaken to close this gap, especially at the local level. Training municipal staff to increase their knowledge and technical capacity must be at the heart of resilience building initiatives. This training can be provided through diverse methods, directly or through training of trainers' methodologies, but needs to be interactive, inclusive and tailored to the situation and needs of the learners. Regarding the content, building knowledge and helping local staff develop a better understanding of complex concepts such as "resilience", "adaptation" or "risk", using concrete examples taken from their own context can be a good first step. Other useful capacities to consolidate in a didactic manner include risk mapping, participatory data collection and community consultation, as well as urban planning.

In recent years, this activity has been consolidated at UN-Habitat thanks to the City Resilience Action Planning (CityRAP) tool, a participatory planning methodology focused on the consolidation of urban resilience at the local level. CityRAP emerged as a training tool to equip local decision-makers and municipal technicians with concepts and mapping capacities to better address risk and vulnerabilities in their local context. It facilitates the identification of priority actions in a participatory manner, towards a more sustainable and resilient city.

Designed to respond to the challenges encountered in the African context, this tool was developed by UN-Habitat in collaboration with the Technical Center for Disaster Risk Management, Sustainability and Urban Resilience (DiMSUR). Based on a didactic and step-by-step approach, the CityRAP has been implemented in over 45 locations in 19 countries across the African continent so far. It has proven relevant in SIDS contexts, where the challenges posed by climate change or disasters of meteorological or geological origin are even higher. For instance, in recent years, 20 municipalities from Guinea-Bissau (six), São Tomé and Príncipe (seven), Cabo Verde (three) and Comoros (four) have successfully undertaken CityRAP implementation, some of them managing to translate the defined priority actions into tangible results, such as the development of resilient infrastructure.

Ensuring broad participation and early local consultations

Inclusiveness and participation are drivers to achieve sustainable development, leaving no one behind. Building inclusive, multi-stakeholders development initiatives enables long-term impact and ownership, especially when the beneficiaries can play an active role in the conception and monitoring of a project's activities.

In the context of accelerating climate change, participatory frameworks are even more essential to spread awareness and build resilience across all segments of society. In human settlements exposed to human-induced and natural risks, as is often the case in SIDS, the poorest communities are usually the most exposed and the most vulnerable to hazardous events. Working with these communities to raise awareness about climate risks and promote risk mitigation or adaptation solutions is therefore a priority.

Encouraging community participation from the diagnostic and conceptual phases of projects enables better alignment of interventions with the real needs and demands of the communities. In several UN-Habitat programmes, the anticipated building of close relationships with beneficiaries and other relevant local stakeholders has also proven crucial to ensure long-term monitoring. Cabo Verde offers a good illustration of the positive impact of community leadership in project design and implementation.

Empowering vulnerable communities and ensuring projects' inclusivity

In general, giving communities an opportunity to actively participate in the definition and framing of the initiatives they are supposed to benefit from is a way to ensure ownership in the implementation process and beyond. However, at the community-level, coordination of people and joint work demand preparatory efforts and the respect of important conditions.

On the one hand, creating a space for open and inclusive dialogue is a crucial first step to ensure equal participation for all community members and sub-groups. Reaching a fair representation of all different segments of society is particularly important in urban and climate-related initiatives, considering the differential impact that climate change, disasters, and even urban planning decisions can have on certain groups. Women, children and youths, disabled and elderly people may require specific attention as well as tailored measures. Sensitizing communities to these important aspects is key to help them achieve a constructive dialogue and develop proposals that will leave no one behind.

On the other hand, with climate change and the existence of natural risks involving permanent (and sometimes increasing) threats for vulnerable communities, it is essential for them to acquire leadership, capacity, and to develop their own resilience mechanisms. For non-professionals, reaching a good understanding of risk and resilience challenges might require specific training. Building capacity across empowered communities can foster effective contributions and strengthened leadership.

Data collection mechanisms for risk-informed policies

Human settlements located in SIDS face multiple risks and challenges that hinder their capacity to develop in a safe, prosperous and sustainable manner. In some cases, disasters repeatedly affect the same cities or communities, when they could be prevented or mitigated. Addressing complex urban issues, exacerbated by climate, natural and human-related risks, requires a good knowledge of socio-spatial dynamics and a range of crucial features and characteristics. Effective data collection and analysis provides policymakers with key information to support decision-making processes and encourage the adoption of risk-informed policies. It also supports resilient urban planning, with tailored adaptive solutions for a given context.

At the national level, improving data collection and analysis can take multiple forms, ranging from staff training to the direct provision of computers or other technological tools. Digitalization is often an essential step in building a data culture.

Box 2. Case study: City Resilience Action Planning (CityRAP) tool implementation in Moroni

In Comoros, the CityRAP tool has been implemented in four cities across the country's three main islands, with two additional municipalities currently completing the process. The experience in Moroni, the capital, has been particularly impactful. Beyond mobilizing political and technical support, it directly influenced policy development: priorities identified in the city's Resilience Framework for Action (RFA) were used to design a new climate resilience programme, led by UN-Habitat and funded by the Adaptation Fund.

The CityRAP process in Moroni included community mapping exercises in the Madjadjou, Bodoni, Médina, and Coulée-de-lave neighbourhoods. The latter stood out due to the presence of a well-established community organization, which facilitated local engagement and ownership. The risk mapping in this area helped residents better understand local vulnerabilities and identify missing infrastructure. Insights from this successful participatory process were also integrated into the RFA, and therefore to the design of the regional climate adaptation project targeting Moroni. This way, bottom-up recommendations from the community could be converted into tangible improvements in access to basic services such as water, sanitation, and waste management.

Beyond its local outcomes, CityRAP also generated valuable data that informed national planning and regulatory frameworks. Findings from CityRAP processes in Mutsamudu and Foumbouni (2022–2023) supported the development of a study on urban vulnerabilities, a practical guide on municipal climate adaptation, and a revision of the National Strategy for Disaster Risk Reduction . By empowering municipalities and communities to take ownership of resilience planning, CityRAP has also provided national authorities with localized, actionable knowledge for future policy and decision-making.

Figure 6. CityRAP participatory mapping exercise in Komotel neighbourhood, Fomboni, Comoros

Source: UN-Habitat, 2019

Strengthening administrations' connectivity and making data management software licenses accessible to public entities can also incentivize positive change. In cases where the highest risks are associated with seasonal weather phenomena, working closely with meteorological institutions is also key, as is strengthening information channels and early warning systems.

At the local level, identifying and mapping the main risks threatening the populations and local economy is an essential step for resilience building and safe urban planning. This process doesn't necessarily require advanced measurement technologies nor a rigorous scientific assessment -although both options could help. Local knowledge and the inhabitants' experience alone can bring critical inputs to risk mitigation at the local scale. This idea is at the core of the already-mentioned CityRAP tool, in which the adoption of a participatory data collection framework facilitates the effective incorporation of grounded and indigenous knowledge into local planning. At the same time, participatory data collection and analysis increases awareness among the population regarding urban and climate challenges, contributing to a stronger risk culture.

Apart from the CityRAP tool, the benefits of participatory data collection methodologies in African SIDS have been demonstrated with another UN-Habitat methodology, called the Spatial Development Framework (SDF). The SDF is a participatory spatial planning method operating at a regional scale, aimed at supporting the articulation of national, regional and local decision-making processes regarding development priorities and investments. It allows for a grounded and inclusive diagnostic of a territory's needs and priorities, based on a data collection process involving the participation of a broad range of stakeholders, including non-governmental actors. It is particularly focused on enhancing infrastructure provision and guiding future public investments, two key aspects to strengthen city and community resilience.

Consolidating national regulatory frameworks

Efficient and resilient urban management at the municipal level is essential for building safer and more inclusive cities. However, municipal efforts alone are often insufficient. Effective support from the national level is necessary, particularly regarding legal frameworks, land administration systems, and broader urban and environmental regulations.

National urban policies have been recognized as crucial coordination mechanisms for enhancing cities' contributions to sustainable development targets (UN-Habitat, 2016; UN-Habitat & OECD, 2024). Collaborating with national stakeholders to establish comprehensive and effective frameworks for urban management constitutes a crucial step in strengthening urban resilience. Well-designed frameworks can integrate resilience into development planning, enforce building standards, and guide land-use decisions that reduce vulnerability.

For African SIDS, this could be achieved through harmonizing fragmented policies, updating existing frameworks to address evolving climate risks and challenges, and incorporating risk-informed zoning into key urban policies and plans. Raising awareness and building capacity among government staff through training and peer-learning processes are essential first steps toward transformative change. Additionally, strengthening decentralization mechanisms that ensure predictable and adequate financial transfers to local governments is key to improving governance throughout the country.

Innovative tools and approaches for urban resilience

Thematic approaches based on the use of technologies and innovative tools developed in recent years have proven successful to address the negative impacts of climate change, in SIDS and beyond.

Digital tools and imagery technologies

Over recent decades, scientific advancements and the technology industry have produced innovative solutions that demonstrate significant benefits for urban planning and disaster risk reduction. Digital technologies and smart tools have emerged as

Box 3. Case study: The Participatory Slum-Upgrading Programme (PSUP) in Cabo Verde

The Participatory Slum-Upgrading Programme (PSUP), is a global UN-Habitat flagship programme that has been implemented in more than 30 countries worldwide, including Cabo Verde. In this country, one of the last steps of the programme involved the implementation of a priority project in a vulnerable community. The capital city of Praia had been identified as a target. Working alongside Municipal authorities, the Country Team responsible for monitoring the PSUP implementation worked holistically with the community association in the Água Funda neighborhood to identify priorities and needs. The participatory framework established for this purpose included the strengthening of the association capacities, the provision of funds for community-managed loan schemes, and the bottom-up elaboration of a neighborhood spatial plan.

The initial idea of the Country Team and authorities was to propose house improvements in this area. During the consultation process, however, the community opted for another option that would benefit not only a few house tenants, but all its members. They proposed the creation of a community center, with the clear intention of making this center a catalyst for employment and economic opportunities locally. They also wanted to have a nursery facility, to provide a childcare solution for working mothers. Additionally, the community decided to equip the center with an auditorium to organize job-oriented training sessions.

The Agua Funda community center stands as an excellent example of how participatory processes can shape interventions in a positive and creative way, fostering economic development and opportunities for all.

Figure 7. Opening of the Água Funda community centre, Praia

Source: UN-Habitat, 2022

Box 4. Case study: The Spatial Development Framework (SDF) in Guinea-Bissau

Strengthening peace and local economies are among the main priorities to ensure a sustainable, resilient and inclusive development in Guinea-Bissau. The Spatial Development Framework (SDF) was deployed in a programme entitled "Prevention of Natural Resources Conflicts related to Pastoralism and Transhumance in Bafatá and Gabu Regions", funded by the UN Peacebuilding Fund. It was intended to support the creation of a regional mapping, diagnostic and action plan, in two rural regions of the country, Bafatá and Gabu, affected by conflicts.

The SDF methodology enabled the participation of different key-stakeholders involved in the management or use of the main resources present in the two regions – mainly, land and water resources. The participatory approach to data collection and analysis proved essential to get grounded inputs, and it also created the conditions for more peaceful dialogue, including among rival stakeholders (farmers and herders). The resulting framework ultimately encouraged the involvement of local or national authorities in the construction of water infrastructures, aimed at making this resource more accessible and reducing conflicts.

The process also included a strong capacity-building component, with the training of local and national actors on strategic planning, and the elaboration of didactic guide in Portuguese. The latter facilitated the dissemination of information, teachings and lessons learned during the process, supporting future efforts towards peaceful land management.

Figure 8. Agriculture in Guinea-Bissau

Source: UN-Habitat, 2022

particularly relevant resources to achieve effective risk mapping and inform urban planning at both city and national scales.

Digitalization has brought crucial improvements to urban and risk management processes. It enables continuous monitoring of a city's development, ensuring institutional memory and enabling effective information management across political transitions. Additionally, digitalization facilitates broader accessibility to key urban data, that can benefit to a broad range of stakeholders beyond government, such as civil society, academia, and the private sector. Contributions from these non-governmental actors to the collection, management and analysis of urban and environmental data have increased significantly, often with a positive impact on policymaking.

In most cases, digitalization represents an initial step towards improving urban, environmental and disaster risk databases, at the local and national levels. Complementary methodologies and technologies have also emerged to deepen analytical capabilities and reinforce the application of data in evidence-based policy development. Geographic Information Systems (GIS), for example, utilize spatial location information for swift conversion of quantitative data into visual maps, providing critical insights for data visualization and spatial analysis.

To acquire more complex spatial information, including invisible objects or subsurface phenomena, such as geological formations or topographical details, additional technologies offer expanded capabilities. In recent years, Autonomous and Remotely Operated Systems (AROS), like drones, have provided high-quality imagery solutions for urban planners, enabling the mapping of previously inaccessible areas due to topographical challenges or resource constraints. In Dakar, the Senegalese Federation of Inhabitants (FSH), with the support of a local NGO (UrbaSEN) has utilized drones to map informal settlements affected by recurrent flooding (World Habitat, 2023). The imagery obtained has permitted to identify the most affected areas and design bottom-up solutions to prevent flooding in those. Similar approaches could be implemented in African SIDS like Comoros or São Tomé and Príncipe, which face comparable challenges, to help prevent disasters including floods and landslides.

Figure 9. Global Frameworks on climate change, disaster risk management and sustainable development.

Source: L. Servières, 2024

The Smart City approach

The concept of smart cities emerged through initiatives led by major Information and Communication Technology (ICT) corporations offering digital solutions for urban environments. Initially, the smart city paradigm advocated for technology-driven urban development, where networked infrastructure and data-driven systems would enhance service delivery and optimize residents' experience of the city. However, recognizing the limitations of purely technological approaches to urban development, the framework has evolved to encompass broader dimensions of sustainable urban development.

Under UN-Habitat's leadership, the smart city model has been reconceptualized to prioritize sustainability, resilience, inclusivity, and human rights as foundational principles. This holistic approach acknowledges technology as an enabler rather than an end in itself, placing people at the centre of urban innovation.

In 2020, UN-Habitat established the flagship programme People-Centered Smart Cities (UN-Habitat Assembly, 2023) to support local and national governments in implementing digital transformation strategies that are ethical, environmentally sustainable, and inclusive, ensuring that digital dividends benefit all urban residents. Applying this framework to promote urban resilience in African Small Island Developing States (SIDS) presents significant opportunities. Several SIDS governments have already embraced smart city principles, as exemplified by Mauritius, which adopted a comprehensive national smart city strategy in 2012. This initiative successfully leveraged digital innovation as a catalyst to attract international investment and alternative financing mechanisms for sustainable urban development projects, demonstrating how the smart city approach can facilitate innovative resource mobilization for climate-resilient infrastructure.

Nature-based Solutions

Climate change mitigation and adaptation require integrated approaches that recognize the interconnectedness of ecosystems and human settlements. Nature-based Solutions (NbS) are defined as "actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits" (IUCN, Cohen-Shacham et al., 2016; World Bank, WRI, Collins et al., 2025). NbS have emerged as transformative approaches to urban development that harness ecological processes to address multiple objectives. These solutions have demonstrated particular effectiveness for climate resilience enhancement and disaster risk management in SIDS, where rich biodiversity and natural assets constitute critical resources. NbS often represent cost-effective interventions that deliver multiple co-benefits, making them strategically advantageous in resource-constrained environments facing fiscal limitations.

Ecosystem-based Adaptation (EbA), a specialized subset of NbS, specifically leverages biodiversity and ecosystem services to help communities adapt to the adverse effects of climate change. EbA strategies are context-specific, utilizing the inherent protective, regulatory, and regenerative capacities of ecosystems, and thus offering tailored solutions to build resilience against climate hazards.

The distinctive geographical and ecological characteristics of African SIDS, characterized by the dynamic interface between marine and terrestrial ecosystems across varied topographical gradients, present unique opportunities for implementing NbS. For example, in Mauritius and Comoros, the restoration and conservation of mangrove ecosystems represent a strategic intervention to mitigate coastal hazards including storm surges and flooding. Mangrove forests, with their extensive root systems, function as natural coastal defence infrastructure, attenuating wave energy and stabilizing shorelines. Beyond their protective functions, these ecosystems serve as carbon sinks, nurseries for marine species, and biodiversity hotspots that support numerous endemic species, thereby delivering multiple environmental and socioeconomic benefits simultaneously.

Fostering economic opportunities at the local level

The six African SIDS possess significant economic potential thanks to their unique biodiversity and natural resources. For some of them, like Seychelles or Cabo Verde, tourism constitutes a major source of income, although the economic benefits from tourism development are not always equitably distributed across the different

Box 5. Case study: Strengthening urban regulatory frameworks as recovery mechanism for climate-related disasters in Comoros

In April 2019, Cyclone Kenneth hit Comoros and became one of the most devastating tropical cyclones in the country's history. Across the three islands, 345,131 people were affected, representing more than 40 percent of the population. To help the country recover from this disaster, the national government, supported by the World Bank, initiated the implementation of the US$ 45 million Post-Kenneth and Resilience Recovery Project. The overall objective of this initiative was to increase the country's resilience to natural and climatic disasters over the long term, through physical interventions and a focus on regulatory frameworks.

As an implementing partner in this project, UN-Habitat's approach focused on reducing vulnerability and strengthening climate resilience through developing an urban management regulatory framework. Activities included: supporting the ongoing decentralization processes in the country and providing technical assistance to the Ministry of Urbanism (MATUAFTT).

As a result of the second aspect, a comprehensive National Urban Planning and Housing Policy was developed between 2022 and 2023. This document was prepared using a participatory approach, with the aim of ensuring more resilient urban management, thus improving households' living conditions, and protecting the environment from climate and human-related risks.

Figure 10. The streets of Mitsamiouli, Comoros, after the Kenneth cyclone in 2019.

Source: UN-Habitat, 2019

segments of society to enhance inclusive growth. At the local level, and especially in the most remote islands or localities, unemployment and the lack of economic opportunities are exacerbating factors for social and climate vulnerability. Strengthening local economies in an inclusive way is therefore a crucial goal to close socioeconomic gaps and build more resilient communities in African SIDS.

To foster economic development in an inclusive, sustainable and resilient manner, various solutions and complementary approaches can be mobilized.

From a thematic perspective, strengthening or incentivizing the development of the following sectors can lead to transformative impacts:

- Sustainable agroforestry and sea-fishing activities, including blue economy practices can provide income opportunities for communities living in rural or remote areas, allowing them to benefit from the rich biodiversity that SIDS offer. These activities can in turn contribute to strengthened local ecosystem protection efforts for the fragile environments they depend upon.
- Ecotourism encompasses practices that encourage sustainable engagement with the environment and cultural heritage of a given area. It typically relies on local and inclusive resource management, with active community participation or leadership, and concrete economic returns for these communities.
- Encouraging entrepreneurship through training, infrastructure provision or financial mechanisms represents another promising avenue for African SIDS, where limited job opportunities often coincide with significant education gaps. Enabling youths and aspiring entrepreneurs to acquire or consolidate professional skills in strategic economic sectors can create meaningful opportunities for sustainable livelihoods.

From a broader perspective, encouraging sustainable and resilient development planning processes, and improving fiscal management at governmental levels will foster economic development opportunities in African SIDS.

Socio-spatial analysis and participatory data collection methodologies can be key allies to start reflecting on the best ways to support local economies. Better understanding the economic potential of each locality has proven relevant in the case of Cabo Verde, to improve development planning at the national level and shape strategic investments from the state.

Creative green and pro-poor finance mechanisms

In certain African SIDS, mobilizing public resources to implement ambitious projects that involve structural change on housing conditions or infrastructure remains a considerable challenge. Following the COVID-19 pandemic and its profound impact on tourism and the economy, financial resources have become even scarcer, further hindering efforts to consolidate resilient development. Innovative funding mechanisms, especially those built through partnerships, can help bridge these finance gaps and address associated challenges.

Multilateral climate funds

Multilateral climate funds offer crucial opportunities for African SIDS governments and civil society organizations engaged in climate adaptation and disaster risk management. These funds provide significant and reliable financial support for resilience initiatives and can also foster peer-learning opportunities when they involve multiple stakeholders, including across multiple countries.

The strength of multilateral funds over other types of funds lies in their ability to pool resources from multiple sources, including DAC member countries and private institutions, and channel them into ambitious, multi-scalar projects. Additionally, they often come with technical assistance, capacity-building support, and access to international expertise, that help bridge capacity gaps and provide national or local staff with solid tools and methodologies, that remain useful even beyond the funded project.

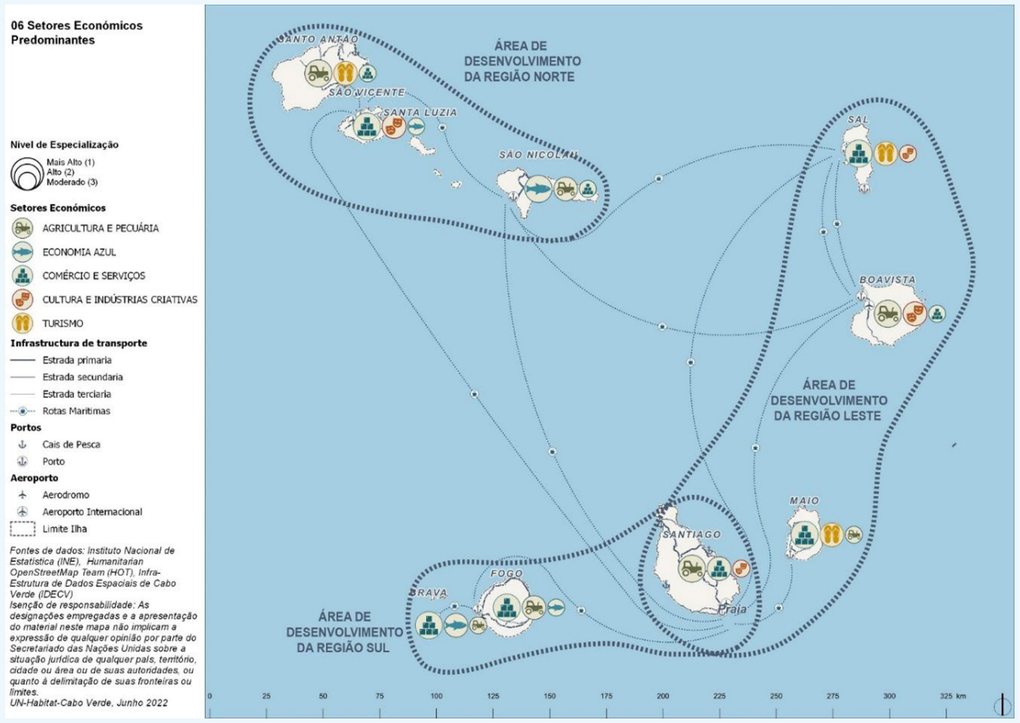
Nevertheless, access to climate funds remains an obstacle for many SIDS governments and stakeholders, due to language barriers, limited

Case study: Realizing the economic profiles of the islands in Cabo Verde

In Cabo Verde, the National Government, through its Ministry of Territorial Cohesion, decided to conduct an assessment to identify the economic profiles of the different islands comprising the archipelago, in order to better address their specificities whilst reducing the significant inequalities between them. Cabo Verde is characterized by a great diversity of ecosystems and landscapes, with each island having its own economy and dominant activities, including different types of tourism. UN-Habitat was invited to provide assistance to this process, and its first task was to build capacity at the national and local levels to enable data collection, management, and analysis. In this context, specific training and support were provided at the municipal level, drawing inspiration from existing tools and methodologies, like the previously mentioned CityRAP and SDF.

The economic profiles of the islands were successfully completed within six months and were integrated into the National Strategic Plan for Sustainable Development of Cabo Verde. Identifying the specificities of each island proved crucial to better understanding their economic strengths and their potential in terms of blue economy, sustainable agriculture and tourism (mountain/sea). In the long run, the economic profiles of the islands will also help national authorities identify needs in terms of infrastructure and strategically plan local development in a sustainable manner.

Figure 11. Dominant economic sectors in Cabo Verde's islands (extract from project's report in Portuguese)



Source: UN-Habitat, 2022

expertise in resource mobilization, and understaffing. Simplifying application procedures for these funds could help to make them more accessible, for example by allowing for multi-lingual applications. Providing tailored support and guidance to help SIDS applicants navigate procedures could also offer opportunities for unlocking climate funding in contexts where it is most needed. Likewise, it is crucial to strengthen the institutional and technical capacities of SIDS to develop robust project proposals and manage funds effectively.

African SIDS, and SIDS in general, continue to be underrepresented in international climate finance discussions. SIDS organizations, along with dedicated international or regional platforms, have a critical role to play in raising awareness of the climate injustices facing insular nations and populations. It is up to continental stakeholders and the multilateral system to amplify their voices and support efforts to close the finance gap.

Nature-based Solutions

Beyond traditional multilateral and bilateral funding entities, the private sector has emerged as an increasingly relevant ally in strengthening urban and climate resilience in African SIDS. The Terra Prometida project in São Tomé and Príncipe illustrates how private sector engagement can effectively support international cooperation efforts aimed at building resilience in SIDS.

African SIDS offer other examples of cases where private companies can play an active role in financing impactful national, local and grassroots initiatives. Mauritius, for instance, has pioneered a tax incentive system that has transformed the private sector into a major sponsor for NGOs and social initiatives targeting socioeconomic vulnerabilities.

Community funds and microcredit

In African SIDS, creative funding solutions for resilience projects have at times originated within the communities themselves, through collective savings initiatives, sometimes facilitated by credit or microcredit mechanisms. In Cabo Verde, during the PSUP (see Box 3), Community Funds were created, in three different islands (Povoação Velha in Boa Vista, Iraque in São Vicente and Água Funda, Praia, in Santiago). These revolving funds financed locally driven initiatives proposed and managed by community members themselves (UN-Habitat, 2023a).

Promoting knowledge exchange and technical cooperation

Apart from the outcomes obtained through integrated interventions, urban resilience best practices and consolidated methodologies acquire more value when they can circulate and be replicated in other projects or geographic contexts. In most cases, effective circulation of knowledge or best practices between peers, or through South-South technical cooperation, can result in minimizing the costs for the beneficiaries of these exchanges, while maximizing the benefits of the initial effort.

In African SIDS, promoting best practices and knowledge circulation seems even more crucial regarding the important barriers imposed by their insular nature, and the higher degree of isolation often experienced by domestic stakeholders. Therefore, encouraging regional or cross-SIDS exchanges emerges as a strategic activity to achieve the consolidation of urban resilience and tackle the common issues faced by African SIDS. Several types of actions can stem from this concern for knowledge circulation and regional synergies:

- Peer-to-peer exchanges during virtual or in-person workshops are essential to create emulation dynamics between participants and strengthen their commitment towards urban resilience topics. They can have a positive impact on stakeholders' or staff motivation and effectively contribute to building knowledge and capacity.

- Incorporating a regional dimension or exchange component directly into project design can enhance exchanges across participant countries or stakeholders, opening a window for constructive dialogue between them. Regional planning and regional efforts can increase the level of success due to the pooling of resources, both human (knowledge) and financial. Allocating a budget to this regional component from the early phases of a project's conception can be strategic to ensure

Case study: The Southeast African Adaptation fund initiative and its regional peer-learning mechanism

Comoros has experienced a catalytic boost in terms of climate financing through Building Urban Climate Resilience in Southeastern Africa, a regional project supported by UN-Habitat and financed by Adaptation Fund. Targeting cities from four countries of the Southeastern Africa region -Comoros, Mozambique, Malawi and Madagascar- initiative aimed to strengthen urban resilience at the city-scale and beyond.

In Comoros, implementation focused on developing climate-resilient infrastructure and building local capacity in the capital, Moroni. The project's design and activities were informed by a prior participatory prioritization process conducted through CityRAP. The municipality played an active role in transforming the identified priorities into a bankable project proposal.

A particularly important feature of the Southeast African Adaptation Fund initiative was its regional dimension, which aimed to encourage exchange and learning among stakeholders in the four cities. Field visits were organized at various stages of implementation, to allow participants to observe their peers' progress and learn from each other's experiences. This case highlights how climate financing can foster constructive exchanges across climate stakeholders at a regional scale, while allowing to transform tailored and locally grounded recommendations into reality in four different contexts.

Figure 12. Drainage system construction in Moroni

Figure 13. Mangrove project in Morondava, Madagascar

Source: UN-Habitat, 2024

that the stakeholders involved in one target country are able to travel to another target country and learn from parallel experiences.

- Technical support provided through South-South cooperation offers valuable insights on complex topics such as disaster risk reduction or resilience planning issues. The technical centre for Disaster Risk Management, Sustainability and Urban Resilience (DiMSUR), for example, has facilitated the integration of a South-South dimension into urban resilience training for governmental staff in South-Eastern Africa. This model holds promise for wider application in African SIDS, facing similar challenges.

- Training-of-trainers (ToT) methodologies enable scalable knowledge transfer across staff and communities. Used mostly at the local level, for example within the framework of the CityRAP tool, they allow for the dissemination of knowledge across human chains in a rapid and sustainable manner, generating solidarity and interconnections between the participants. The pyramidal structure involved in training-of-trainers methodologies presents real advantages for the management and monitoring of projects, minimizing costs in both financial and human resources and creating replication opportunities. These methods often serve as catalysts for continued engagement and replication well beyond the original intervention.

Case study: The Terra Prometida project in São Tomé and Príncipe

This project was jointly initiated by the Government of the Autonomous Region of Príncipe and a private company, Here Be Dragons, to provide alternative housing solutions for the Roça Sundy community, which was living in inadequate conditions. UN-Habitat supported the EUR 5.5 million resettlement process by designing a comprehensive participatory framework.

Through its representative committee, the community was actively involved in the whole conception and planning of the eco-village where the inhabitants were to be relocated. The latter was named "Terra Prometida", or "Promised land" in Portuguese. The project emphasized sustainability, using environmentally responsible building materials and selecting a site that minimized deforestation and preserved local ecosystems. Funding from the private company enabled the construction of 133 houses, directly benefiting 504 individuals.

Although the COVID-19 pandemic posed implementation challenges, the project also became a significant source of economic activity during the tourism slowdown, benefiting from a strong political backing from the national government of São Tomé and Príncipe. Additional funding from the latter, and from another private company present in the country enabled the connection of the new neighbourhood to electricity and water services. The private sector's financial contributions were crucial to achieving the project's goals and ensuring adequate living conditions for the relocated community. One of the key success factors was the project's multi-stakeholder approach, which integrated political, technical, and financial support.

Figure 14. Skyview of Terra Prometida neighbourhood with all 133 houses built

Source: UN-Habitat, 2023

Conclusion and key takeaways for increased urban resilience in SIDS

05

Strengthening resilience in cities and human settlements: a priority for African SIDS

Small islands' intrinsic features such as size, boundedness and remoteness, coupled with socioeconomic and governance challenges, make SIDS extremely vulnerable to hazards and the negative effects of climate change. At the same time, both their stronger vulnerabilities and the disproportionate climate burden they are carrying compared to bigger polluters remain insufficiently acknowledged on the international scene, making it difficult for their governments to access climate finance opportunities.

In African SIDS, the lack of domestic resources and international funding for resilience building and adaptation remains a critical issue. However, due to their geographic, linguistic and economic differences, the six African SIDS are rarely considered together, which often leads them to miss external opportunities.

In addition to this, some of them are confronted with important constraints in human and institutional capacity, affecting the effective management of cities and the implementation of robust adaptation strategies. Capacity limitations hinder SIDS governments from implementing effective measures to tackle risks and improve the welfare and safety of human settlements. The lack of data on urban and environmental dynamics, as well as climate change impacts, is another major challenge, often undermining effective and evidence-based policymaking.

Regarding the complex interlinkage of challenges, gaps and risks that their human settlements are facing, consolidating resilience in African SIDS requires the adoption of integrated and holistic approaches of sustainable development, coupled with adaptation strategies and disaster risk management measures.

Selected recommendations for increased urban resilience and climate adaptation in African SIDS

To help African SIDS governments and stakeholders achieve these objectives and build more resilient and inclusive cities and human settlements, this paper has presented a set of approaches and methodological recommendations. While not exhaustive, these recommendations are based on the experience of UN-Habitat in African SIDS, as well as that of its key partners.

- Build capacity at the local level to achieve resilient urban planning
  - Train local staff and key stakeholders to resilient urban planning and risk mapping
  - Prioritize ensuring resilient infrastructure and basic services for all
- Encourage governments, civil society and private sector participation in the elaboration of risk mitigation and climate adaptation strategies
  - Make sure that consultation processes are undertaken early enough to align with stakeholders' vision and priorities
  - Spread a culture of risk across all levels of governance and society
- Empower vulnerable communities to give them a voice in adaptation processes, and make these inclusive for all
  - Raise awareness on climate change impacts and disaster risk
  - Build inclusive participatory frameworks to ensure that all stakeholders, including the most vulnerable groups, can positively contribute to local and national policymaking
  - Incorporate indigenous and community-grounded knowledge in the elaboration of diagnostics, especially for risk management purposes.
- Foster data collection and consolidation through participatory methods and the use of technology

- Bridge the data gap through effective, grounded and participatory data collection
- Build capacity to improve data management and use at the government level

- Consolidate national regulatory frameworks for urban and environmental management
  - Build solid regulatory frameworks at the national scale, based on an in-depth understanding or urban, environmental and climate dynamics
  - Build capacities and enabling environments to ensure the effective implementation of existing regulatory frameworks
- Mobilize innovative approaches to resilience building and climate adaptation, including smart and digital tools, Nature-based Solutions (NbS) and Ecosystem-based adaptation (EbA)
  - Leverage the potential of innovative digital tools and technologies to improve urban management and risk mapping
  - Leverage the potential of ecosystems and natural resources to strengthen adaptation at the city and the community level
- Enhance economic opportunities at the local level to tackle socioeconomic vulnerabilities and increase sustainability.
  - Bridge education and professionalization gaps through inclusive training in key economic sectors, targeting youngsters and women in priority.
  - Improve access to basic services, including in remote communities, to enable prosperous economic environments (e.g. access roads, public transports, etc.)
  - Enhance the potential of SIDS' unique biodiversity for economic development through sustainable and locally based resource management.
- Make green and climate finance more accessible to African SIDS stakeholders
  - Open specific finance opportunities for SIDS, targeting climate risks but also addressing existing socioeconomic and governance challenges.
  - Make existing climate funds more accessible to SIDS governments and stakeholders
- Encourage knowledge circulation through peer-exchanges and South-South cooperation across African SIDS and beyond
  - Promote South-South cooperation and peer-to-peer exchanges to build capacity at the local and national level on disaster risk reduction approaches
  - Promote Training-of-trainers (ToT) methodologies for effective knowledge circulation

Key takeaways on the contribution of cities and human settlements to resilience building efforts in African SIDS

Urban, rural and suburban human settlements have a central role to play in strengthening resilience in African SIDS. Acknowledging both their vulnerability and their importance in the development of these countries is a key step to move forward on the path towards a resilient and sustainable development. Particular attention should be paid to the following aspects that pave the way for safer and more inclusive human settlements in African SIDS:

- Implement resilient urban planning, based on a shared and risk-informed understanding of space
- Ensure universal access to resilient basic services, including in informal settlements and rural areas
- Prioritize assisting vulnerable groups in mitigating the risks they face and addressing the root causes of their climate sensitivity
- Cultivate a comprehensive risk awareness culture across all levels of society
- Sustainably manage and protect ecosystems for healthier urban environments and to preserve SIDS' unique natural heritage.

These priorities require both top-down policy approaches and bottom-up community engagement to be effective. By addressing these fundamental areas, urban and climate stakeholders in African SIDS can build the necessary groundwork to manage the unique vulnerabilities of these contexts, while creating more inclusive, adaptive, and sustainable human settlements.

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