CAPE VERDE

THE COUNTRY IS
MOST SUSCEPTIBLE TO
DROUGHT, TROPICAL STORMS,
AND EPIDEMICS

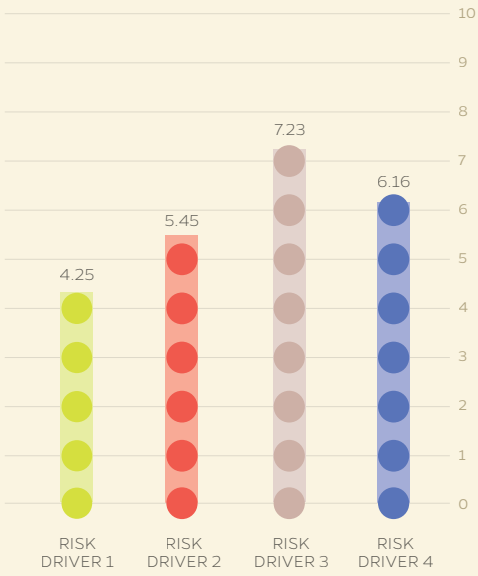
EPIDEMICS
HAVE CAUSED THE GREATEST
LOSS OF LIFE,
WHILE **DROUGHT** HAS
AFFECTED THE MOST
NUMBER OF PEOPLE

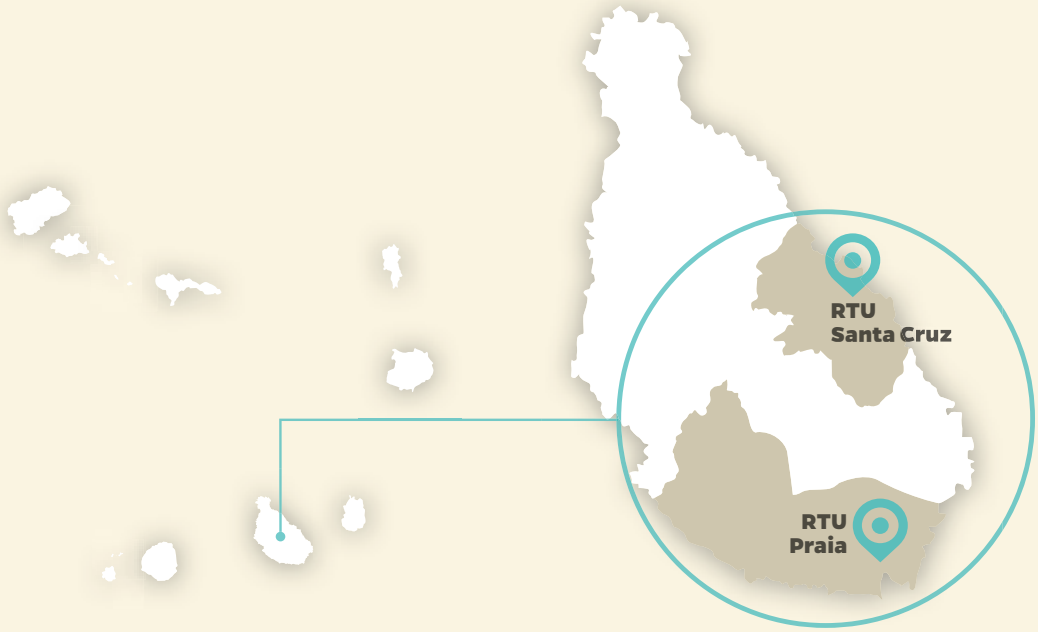
STORMS
HAVE INFLICTED THE LARGEST
ECONOMIC DAMAGES,
AND ALSO RANK SECOND
IN TERMS OF LIVES LOST

THE ISLAND OF FOGO
EXPERIENCES ACTIVE
VOLCANIC ACTIVITY

Source: EM-DAT (CRED)

CAPE VERDE SCORES FROM WEST AFRICA RISK MAPPING





INSTITUTIONAL Capacity for DRR

DRR Institutional Setup
AND LEADERSHIP

The Serviço Nacional de Proteção Civil (SNPC-National Civil Protection Service) was established under the 1999 Civil Protection Law. It serves as focal point for the National Platform for DRR, created in 2007, and is governed by the Conselho Nacional de Proteção Civil (CNPC-National Civil Protection Council). The SNPC is also the Hyogo Framework for Action (HFA) focal point, and has become a key player in terms of disaster preparedness and prevention at both municipal and national levels.

The government of Cape Verde created a commission in 2007 (headed by the Ministry of Internal Administration) to explore how to pursue DRR. Different sectors were assigned responsibilities in the commission, including responsibilities related to coordination during emergencies. Such sectors include the national police, firefighters, armed forces (military), the Red Cross, air and maritime authorities and health services.

The commission published the National Contingency Plan for Disasters in 2010, which focuses on identifying different sectors (government, public, and private) that should work together as key actors for risk reduction and/or prevention. It also identifies the need to develop sector specific laws to strengthen technical and institutional capacities in order to improve management in disaster situations.

As part of its mandate on disaster preparedness, the SNPC carries out emergency drills in schools, hospitals, and the airport. It is also collaborating in the preparation of their respective emergency plans. However, it has been noted that there is a need for more training on internal emergency planning in the education and health sectors.

The SNPC and the UN Office in Cape Verde have partnered to launch an awareness-raising campaign on different risk topics annually. In 2010, the two collaborated in developing the first training on Rapid Humanitarian Needs Assessment, along with targeted training to education professionals, and municipal councils participated in the initiative. Nevertheless, communication constraints between islands need to be improved zand training measures should be updated and implemented.

On the legislative side, Cape Verde's Government has promoted various laws and regulations aimed at ensuring the sustainable usage of natural resources, maritime activities, territorial planning and forestry. Laws addressing specific environmental interests have also been announced.

According to the UN, the Parliamentarian Network on Environment Desertification and Poverty has played a significant role in the adaptation of existing legal environmental frameworks, in compliance with multilateral agreements on biodiversity, climate change and desertification. Environmental governance is further supported by the implementation of the Environmental Information System (EIS) website and capacity development efforts.

Capacity building and technical assistance in DRR is being introduced, and most municipalities are equipped with emergency centres as part of decentralisation efforts that aim to bring prevention and protection issues closer to local populations. Part of this process has also included providing local staff with the appropriate tools and knowledge that will enable them to prepare and respond more quickly in the case of an emergency. The UN has praised these initiatives on preparedness and response; however, limited capacity in enforcing laws remains a challenge.

There remains a need for Cape Verdean authorities to move beyond solely contingency planning and a strictly disaster preparedness mode, to incorporate a more comprehensive understanding of DRR that includes addressing underlying risk.

Strategic

DOCUMENTS AND PLANS

Cape Verde has developed a Strategic Plan for DRR 2015, seventeen municipal emergency plans, three Special Emergency Plans (volcanic eruption, drought and wildfires), and specific plans for the oil industry, hospitals and education facilities. The government has adopted the HFA and its National DRR Platform is operational. In addition, a preliminary National Hazard Profile was conducted, as was an analysis of disaster risk assessment in the country. Twenty-two emergency centres, one in every municipality, are now equipped to assess and respond to disasters. However, certain municipalities feel unprepared and lack appropriate equipment to face certain calamities.

In 2006, the first annual report on the Poverty Reduction Strategy Paper (PRSP) was released. Although DRR is not specifically included as such, the fourth aim of the PRSP is highly relevant, which is to "improve and develop basic infrastructures, promote land management, and conserve the environment." Accomplishments within this aim relate to DRR, specifically in regards to water and sanitation. The country reported successes in the construction and rehabilitation of reservoirs and wells, the installation of water and sewage piping, and the construction of sewage pumping stations. However, at the time of writing this report, only Praia and Mindelo had functioning sewage treatment systems as construction challenges had been encountered in other municipalities. Furthermore, the goal of 40% coverage for solid waste collection has not been reached.

Cape Verde still lacks cross-sectoral collaboration and mainstreaming of DRR into sectoral plans, except perhaps in education where modules have been introduced into the national curriculum as part of the government's efforts to raise awareness among the population. There remains a need for Cape Verdean authorities to move beyond solely contingency planning and a strictly disaster preparedness mode, to incorporate a more comprehensive understanding of DRR that includes addressing underlying risk.

According to Cape Verde's National Progress Report (2009-2011) on the Implementation of the HFA, some achievements have been made while constraints are acknowledged as well, specifically in terms of financial resources available and operational capacities. Cape Verde launched the National Platform for DRR with the aim of integrating DRR into national development policies and strategies with adequate and defined responsibilities. While the National DRR Platform is supported by Portugal and United Nations International Strategy for Disaster Reduction (UNISDR), there have been certain constraints related to its implementation given the country's fragmented territory, the high geographic dispersion of municipalities and institutions' insufficient knowledge of the HFA. This reveals a need for further training on this matter.

National and local risk assessments have been prepared in line with regional guidelines. However, the SNPC has identified the language barrier as a main limitation as Cape Verde is located within a francophone area. Additionally, its isolation as an island nation has posed a problem for other national civil protection services in the sub-region when engaging with Cape Verde, and vice versa.

The HFA progress report affirms that an important challenge to implementing DRR is the need to define a strategy that aims to build synergies with the various stakeholders involved and allocate sufficient resources to DRR, taking into account the increasing size of the country's vulnerable population. Targeting DRR information campaigns to decision makers could be an essential step towards the adoption of effective DRR measures. Mobilising human and material resources is

also necessary to reach this goal.

Cape Verde has produced a National Adaptation Program of Action on Climate Change (NAPA). As each of the NAPA objectives is related to building resilience to climate change, each is relevant to DRR. The three objectives are to: 1) Improve integrated water resource management (IWRM); 2) Develop adaptability of agro-silvo-pastoral production; and 3) Protect and prevent degradation of coastal zones. The NAPA also identifies cross-cutting strategies to accomplish these objectives, such as capacity-building, increased investment at the national level, information campaigns, and action research (i.e. transferring local lessons learned to the national, decision-making level). The country's National Strategy Action Plan against Climate Change focuses primarily on the reduction of greenhouse gas emissions.

In accordance with aforementioned reports and efforts, prioritised actions include the construction of water system infrastructure, modernisation of irrigation systems, implementation of renewable energy projects, rehabilitation of coastal protection infrastructure, and the diversification of activities for populations that live off the land. The consensus between these documents and government actions demonstrates a clear understanding of and a commitment to DRR.

Other actions worth noting are the Sistema Nacional Integrado de Socorro, the Projecto de Cartografia de Riscos, Projecto SIERA (Sistema de Inventário e Análise para a Avaliaçao de Riscos na Africa Occidental), and the Observatório Vulcanológico de Cabo Verde. The SIERA project is being implemented by SNPC, the United Nations Development Programme (UNDP) and research partners to define an Inventory and Risk Assessment system, which will include the creation of a database of the major risks affecting Cape Verde, a Disaster Observatory and a risk profile of the country.

International

ENGAGEMENT AND SUPPORT

Cape Verde benefits from a strong One United Nations Programme, which includes a DRR component. Environment, Energy, Disaster Prevention and Response is the third thematic axis of the One UN Program mandate in Cape Verde. Of the $14.3 million in UN expenditures in 2011, 32% ($4.55 million) was dedicated to efforts in this axis, the most spent on any one axis. Several accomplishments have been made under the objective that "national and civil society ensure effective management in disaster response." UN funding has also been utilised to build adaptive capacity and resilience to climate change, including the construction of water reservoirs and check-dams for soil conservation and salt reclamation. United Nations Environment Programme (UNEP) has engaged in a Climate Change Vulnerability Assessment, while UNDP has worked to rehabilitate coastal zones.

UNDERLYING Risk Factors: Local Perceptions

RTUs Selected

AND SUPPORTING RATIONALE

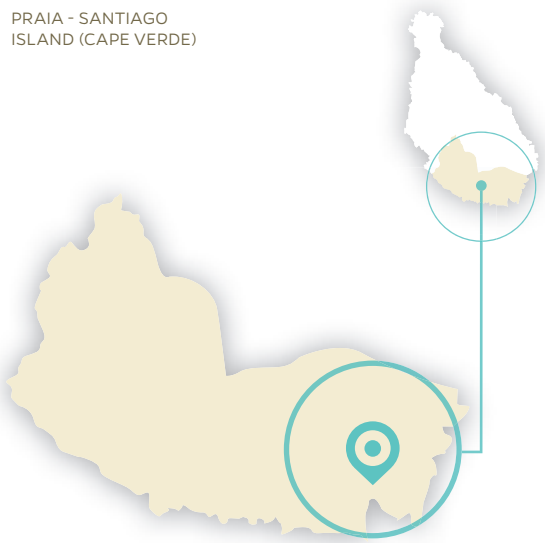
The RRI in Cape Verde looked at two RTUs, each of which represented a different risk typology—Praia, the capital (urban), and Santa Cruz (rural). While both RTUs are located on the island of Santiago, each presents a distinct profile in terms of hazards, environmental concerns and risk typology. The rural versus urban locations also provide a more comprehensive picture of the underlying risks affecting the people of Cape Verde and the conditions in which they live that make them more or less vulnerable to natural hazards.

Praia

Praia is the capital of Cape Verde and the country's largest city with a population of more than 120,000 inhabitants, about one-fourth of the country's total population. Praia is located between plateaus and valleys to the north and an extensive coastline to the south. Its development began following Cape Verde's independence in 1975, and the city has grown consistently since then, receiving a large population influx from rural areas in search of job opportunities. Facilitated by the high remittances from Cape Verdeans living abroad, Praia has experienced a boom in construction. Praia is an important example of the challenges related to urbanisation, including rapid and uncontrolled expansion, inadequate basic services, and housing in hazardous locations. From 1990 to 2000 more than half of Cape Verde's population moved to urban areas. One consequence of this migration trend has been a rise in the number of female-headed and single-parent households.

The climate of Praia is arid with a limited but intense rainy season. With an estimated 260 millimetres of rain annually, the island has a significant water deficit, which particularly affects agricultural activities. The national government, together with international partners, has worked to equip the island with water drainage systems and dams to respond to both drought crises and irregular rainfall. Praia is subject to intense rains, floods, and mass movements on a regular basis. Urbanisation, due to rural out-migration, internal migration from other islands, and immigration from the sub-region, has increased the level of risk posed by natural hazards and has heightened underlying factors of vulnerability. Risks in particular arise due to housing and infrastructure being located in dangerous areas, such as riverbeds and steep slopes, and while laws on the usage of land and urban development do exist, such as the Laws and Norms on Territory Organisation and Urban Planning (Decree Law nº 1/2006, of February 13), they are often overlooked or poorly enforced.

PRAIA - SANTIAGO ISLAND (CAPE VERDE)

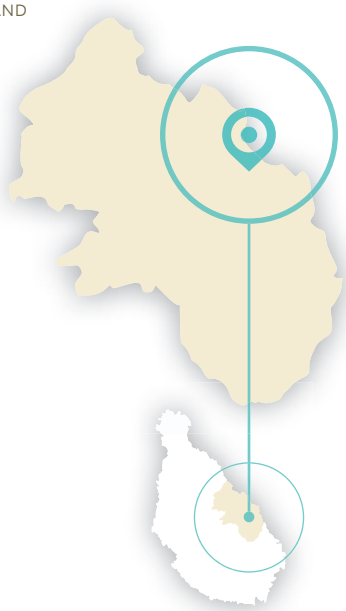


RTU Praia

WATER SCARCITY
AFFECTS AGRICULTURAL PRODUCTION AND LIVELIHOOD OPPORTUNITIES

LIMITED ACCESS TO WATER
IS A CHALLENGE IN URBAN AREAS

SANTA CRUZ -
SANTIAGO ISLAND
(CAPE VERDE)



RTU Santa Cruz

ILLEGAL SAND EXTRACTION PRACTICES CONTRIBUTE TO COASTAL EROSION

Santa Cruz

Santa Cruz is a rural municipality on the island of Santiago. It is situated 40 km from Praia, on the eastern coast. Santa Cruz has a population of more than 26,609 inhabitants and is historically known as an agriculture centre. Santa Cruz's population is young, with 75% under the age of 25. Illiteracy rates are high in the area and school attendance is uncommon beyond elementary school. Additionally, more than 50% of the population is female, with an equal percentile of female-headed households. Limited job opportunities in rural areas are affecting the area's young population, causing many to migrate to urban areas like Praia and Mindelo. Santa Cruz provides an important contrast to Praia, primarily due to its rural profile and location on a flood plain, along with an agricultural sector heavily affected by the relative decrease in agricultural production that has characterised Cape Verde in recent decades.

Santa Cruz's climate and environmental conditions are very similar to the rest of Santiago Island. Its arid and semi-arid climate is a result of Cape Verde's Sahel position. However, the archipelago's location in the Atlantic Ocean allows for a varied climate, particularly in relation to levels of humidity. The population of Santa Cruz engages in agriculture, cattle, and forestry activities, and the area is an important agricultural production centre for the country. The main agricultural crops are maize, bananas, papayas, and coconuts.

Soil erosion is a pressing issue for Santa Cruz and other rural communities, as it leads to coastal erosion. In the past decade, the activity of sand extraction from coastal areas on the island of Santiago has had devastating results. Sand extraction in neighbourhoods such as Ribeira dos Picos, Ribeira Seca, and Ribeira da Santa Cruz has led to coastal erosion and increased salinisation of agricultural lands. Until 1990, the extraction of sand was a legal activity in Cape Verde and was promoted by the national government as part of an effort to build state infrastructures in the country's capital and beyond. During the decade that followed, sand extraction became an important activity in Santa Cruz, employing many workers, particularly women. Today, however, the Decree Law 2/2002 has made unauthorised sand extraction illegal and incurs high fines. Officials from the Ministry of Environment, Housing, and Territory Planning claim that the illegal and non-licensed extraction of aggregates (mainly sand and gravel) is the most devastating activity for the territory of Cape Verde. In addition, changes in the laws have contributed to increased migration out of Santa Cruz to Praia and other islands where tourism is high and there are greater employment opportunities.

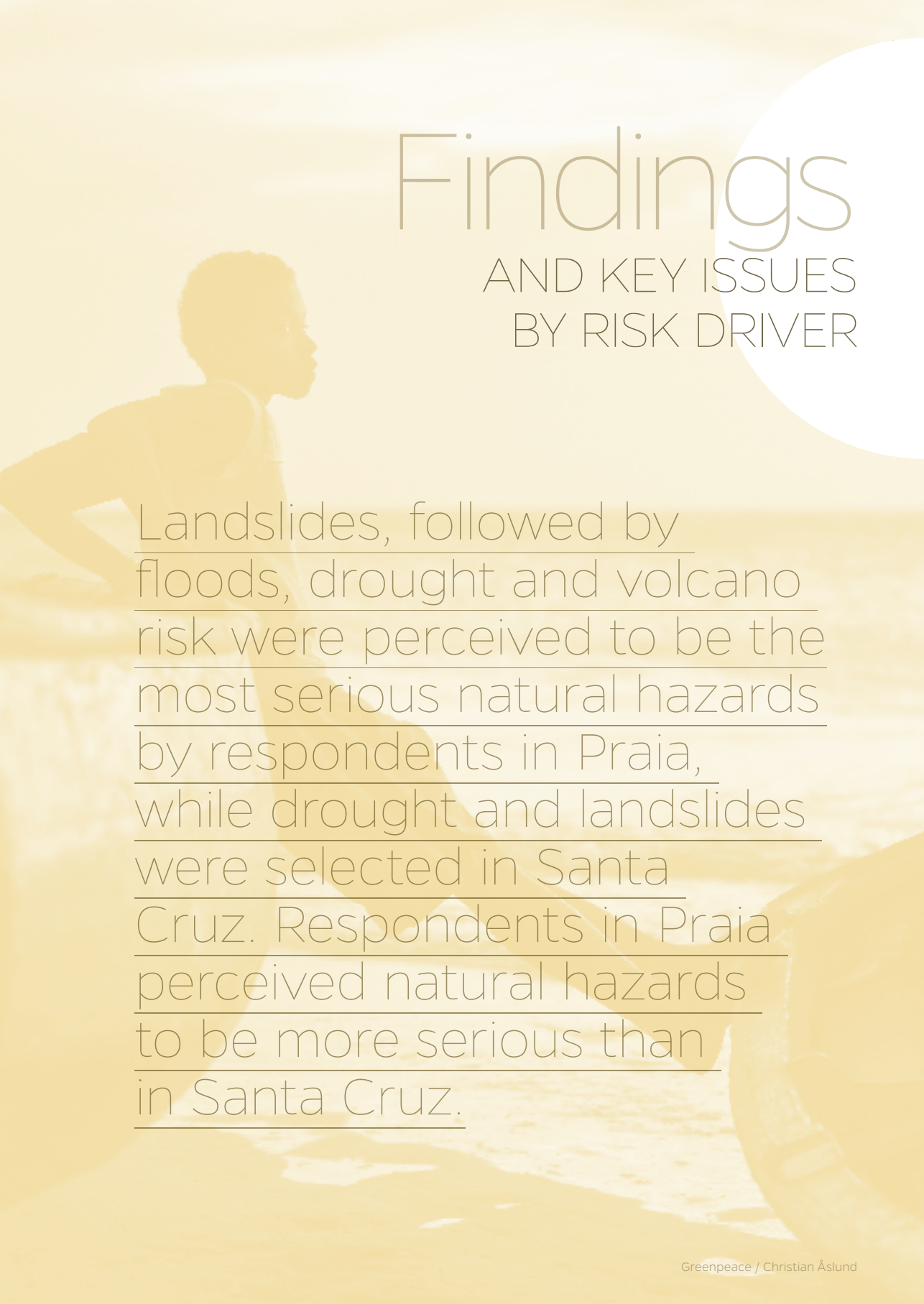
NATURAL HAZARDS AND UNDERLYING RISK FACTORS OF SELECTED RTUS

	PRAIA (URBAN)	SANTA CRUZ (RURAL)
NATURAL HAZARDS	FLOODS, LANDSLIDES	FLOODS, DROUGHT
RISK DRIVER 1 1	· Coastal erosion · Soil erosion · Water scarcity	· Coastal erosion · Soil erosion · Water scarcity
RISK DRIVER 2 2	· Poverty · Unemployment · Out-migration · In-migration · Limited access to land	· Poverty · Unemployment · Out-migration · In-migration · Low levels of literacy
RISK DRIVER 3 3	· Housing in dangerous locations · Poorly built housing · Limited access to water · Poor drainage/water disposal	· Housing in dangerous locations · Poorly built housing · Poorly built critical public facilities · Poorly built productive infrastructure
RISK DRIVER 4 4	· Centralised decision-making · Inefficient bureaucracy · Limited financial capacity	· Inefficient bureaucracy · Limited financial capacity · Lack of accountability

Findings

AND KEY ISSUES BY RISK DRIVER

Landslides, followed by floods, drought and volcano risk were perceived to be the most serious natural hazards by respondents in Praia, while drought and landslides were selected in Santa Cruz. Respondents in Praia perceived natural hazards to be more serious than in Santa Cruz.



Greenpeace / Christian Åslund

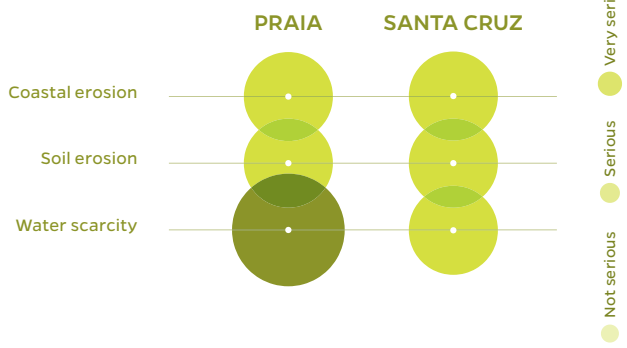
Local Perceptions on Risk Driver 1

Environmental and Natural Resources

Both Praia and Santa Cruz present similar environmental conditions and a shared semi-arid climate. Several key issues were identified by respondents in each RTU.

Water scarcity was perceived to be the most serious issue, followed by soil erosion and coastal erosion. While deforestation and desertification were also key concerns, as well as water contamination in Praia, respondents did not o er details on why these issues were selected. Soil erosion, water scarcity, deforestation and desertification all negatively impact agricultural production and hence also livelihood opportunities among local populations in the rural areas.

ENVIRONMENTAL CHALLENGES IN PRAIA AND SANTA CRUZ



1 COASTAL EROSION

Coastal erosion caused by sand extraction is an important challenge facing farmers in Santa Cruz. As previously stated, the extraction of sand has caused salt intrusion on lower lying agricultural lands with devastating outcomes in terms of unproductive soil that disrupts food production and hence farmers' livelihoods. Through NGOs such as MORABI, measures such as the provision of micro-credits and technical trainings have been taken in order to provide incentives and encourage women to seek alternative income activities. Continued demands from the private sector, combined with weak law enforcement capacity and few economic alternatives for rural women and men, mean that sand extraction remains a practised income alternative.

2 SOIL EROSION

The great variability in precipitation, combined with inappropriate or inexistent watershed management, means that heavy rainfall in higher lying areas often contributes to soil erosion in lower lying zones. Soil erosion is common in both RTUs. In Praia it creates complications in terms of safe building environments, while it is a direct threat to livelihoods in Santa Cruz and other rural communities on the island. Despite initiatives to protect the soil in Santa Cruz, such as reforestation or the construction of retention walls, measures have not sufficed in terms of protecting the fragile environment in the lower lying arable lands. According to respondents, plans of action such as the Second Plan of Action for the Environment, have been developed to protect agricultural, maritime, and forestry activities, but have had limited success.

Respondents indicated that the construction of retaining walls has had both positive and negative consequences. Usually, when the rainwater hits the retaining wall, the pressure of the water further intensifies and consequently hits the ground with stronger impact, thus causing the soil to erode further. This finding clearly points to insufficient and inadequate watershed management in rural areas.

3 WATER SCARCITY

Limited annual rainfall is one cause of water scarcity on Santiago Island, particularly affecting agricultural activities. Respondents stated that any measures taken aimed at storing rainwater or preventing further soil erosion during the rainy season have been insufficient thus far.

Regarding environmental issues in general, at the community level there are local associations that work in collaboration with the local government to improve environmental conditions. The local municipal offices in both RTUs have installed standpipes and fountains, but these interventions have been evaluated as minimally effective for their inappropriate location and for the control exerted by certain power groups. The existence of internal or irregular control mechanisms over the fountains prohibits public access to drinkable water (existence of "gatekeepers" over water resources). Therefore, some families have to buy water from households with running water or buy water tanks for water provision, as well as treat water themselves. The "do-nothing policy" of the local authorities regarding this issue was criticised by many respondents. Respondents also claim that the poorest communities have been neglected by local government.

Respondents recognised local government efforts to build water pipes and water reservoirs, but low technical capacity and limited funding are seen as essential factors that reduce the effectiveness of the intervention. International organisations were identified for their support to the national government in dam and water pipe construction. These interventions were valued as somewhat effective, due to the fact that dams are only located in some rural communities and because of the lack of access of individual households to water piping systems. Water distribution by international organisations, in contrast, was identified as a very effective intervention.

The national government has financed the installation of drip irrigation systems in Santa Cruz, a measure that was very popular among the local community. Other infrastructures such as dikes, fountains, dams and wells have also been built by the government. However, these were valued as only minimally effective by Praia respondents as they do not reach poor communities. In order to maintain income-generating activities, more sophisticated measures like planting more resistant crops and using water saving techniques in farming activities have been implemented in Santa Cruz. Moreover, projects to build water pipes led by state institutions have been considered effective for their correct allocation of funds, technical capacity and for the establishment of partnerships with international organisations that have provided funding.

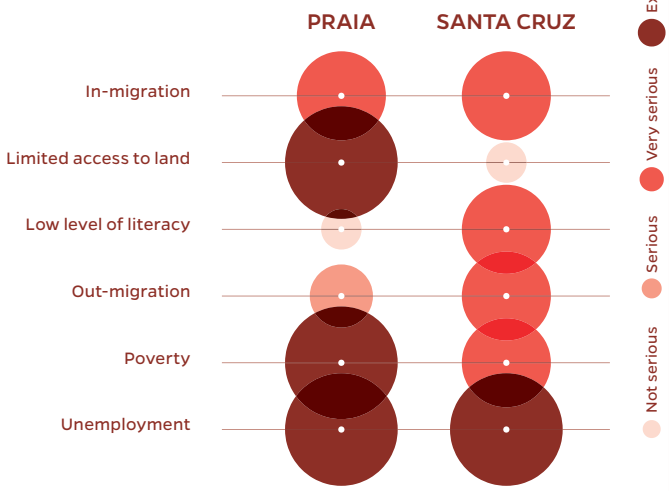
In terms of awareness building in Praia, respondents cite education campaigns, talks and special days dedicated to water awareness that have been organised. However, others claim that there is still a lack of awareness at the household level of water saving practices. Respondents recommended that more environmental education be included in the school curriculum in order to raise awareness on the importance of protecting natural resources. Among the international organisations present in the country, the Red Cross has been noted for its training programmes on DRR, which previously only reached local leaders but recently broadened to include more people.

Local Perceptions on Risk Driver 2

In both RTUs, poverty and unemployment were identified as the primary socioeconomic concerns, while limited access to land was highlighted by respondents in Praia, but not in Santa Cruz. In Santa Cruz, low level of literacy was considered to be a serious issue, and in both areas migration was a key concern.

Socioeconomic Conditions

SOCIAL AND ECONOMIC CHALLENGES IN PRAIA AND SANTA CRUZ



1 IN-MIGRATION AND OUT-MIGRATION

Praia respondents identified two types of migrating communities, those coming from rural areas and those coming from different islands. Both groups are seen as highly vulnerable due to their lack of knowledge about the areas they are living in. These migration flows have increased overcrowding in cities and contributed to unsafe housing as incoming migrants generally lack resources, leading them to build their houses in locations with higher exposure and low quality materials. As most migrants come from rural areas, they tend to continue their rural practices, such as animal husbandry, which are ill-suited for the urban area and lead to unsanitary conditions. Migrant populations are generally less connected to the community and have fewer resources. Consequently, these families are often supported by local family centres.

National institutions have also implemented a multi-annual development plan to develop a more sustainable economy in Cape Verde, which respondents considered to be only minimally effective. International organisations have put in place microcredit systems which the local government is collaborating with by carrying out inspections and monitoring. These systems are viewed as somewhat effective by respondents.

2 LIMITED ACCESS TO LAND

In Praia, limited access to land due to overcrowded conditions has led to irregular settlements with unsanitary conditions. This situation is further causing people to build in dangerous areas such as steep slopes or waterbeds. Respondents claimed that the city council was handing over land in a very uneven way, with priority given to those who can

afford to pay for land tenure. This situation is pushing people to build in hazardous areas, in some cases while waiting for an administrative answer from land tenure institutions. Plot division and lot sales, implemented jointly by local and national governments, were assessed as effective but lacking technical expertise and funding in some cases. Leasing is a common practice in rural areas (Santa Cruz), but valued as not effective at all as there are often disagreements between landlords and farmers. There is also a need for training on how to select appropriate crops to increase agricultural returns and profitability.

3 LOW LEVELS OF LITERACY

Respondents recognised that those with low levels of literacy are more vulnerable to disaster risks. However, in some cases, respondents did not believe that families were not completely aware of the value of education and how it might affect a change in their status. The national government has put in place literacy programs, and has implemented night courses in schools targeted to adult learning. Both interventions have been scored as somewhat effective. Nevertheless, respondents claim that funds and technical capacities have been reduced and that students receive little support from institutions to further pursue studies or internships. At the local level, education projects are limited by a lack of funds and technical support, but respondents acknowledge that even with these various constraints, education initiatives are very highly valued and most of them were considered very effective.

4 POVERTY

Respondents clearly identified the relationship between poverty and increased vulnerability to disaster risks. People with limited resources tend to have riskier habits (unsafe water and housing), and some respondents commented that it is much more difficult for these people to change attitudes and habits. Microcredits and national government partnerships with international organisations to fight poverty have been identified as somewhat effective interventions. Respondents also cited sufficiently allocated budgets, good results, and project design based on relevant needs of the population as reasons why these efforts are viewed positively. In Praia, other plans and projects put in place by the local and national government have been viewed as somewhat effective, especially those targeting poverty issues.

5 UNEMPLOYMENT

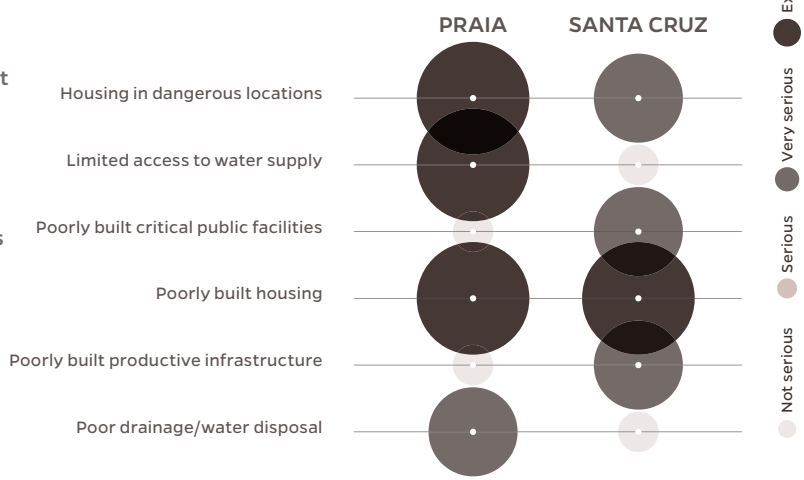
In the case of unemployment, the national government has implemented a range of projects for employment. These include entrepreneurship and vocational training for youth and women, which have been assessed as somewhat effective but are suffering from insufficient funding and reduced technical capacities. Only in the case of vocational training did respondents highlight that both the national and local governments allocated sufficient funds for this type of project.

Local Perceptions on Risk Driver 3

Land Use and Built Environment

Respondents in both Praia and Santa Cruz acknowledged several issues related to land use and the built environment. In both rural and urban settings, respondents identified housing in dangerous locations and poorly built housing as serious concerns. Poorly built productive infrastructure and poorly built public facilities were rated more severely in Santa Cruz. This reflects a concern in rural areas that insufficient investments have been made to protect agricultural production. In the case of Praia, limited access to water supplies and poor drainage/water disposal systems were primary concerns.

LAND USE CHALLENGES IN PRAIA AND SANTA CRUZ



1 HOUSING IN DANGEROUS LOCATIONS

Despite legislation and regulations aimed at avoiding the proliferation of housing in dangerous locations, residents ignore norms and regulations mainly due to a lack of alternatives. The emergence of unorganised neighbourhoods with illegal constructions proves a challenge for authorities, both in terms of protecting and having access to the population in times of crisis. Many neighbourhoods have proliferated with little or no fiscal observation due to this rapid expansion. In order to be less noticeable, these homes are constructed in low valleys where flooding easily occurs, with no civil engineering guidance and/or control, and with very poor materials– cardboards, plastic, wood pallet, spares of timber, etc.

Apart from building houses on slopes and flood-prone areas, some respondents cited cases of homes being built near gas/fuel facilities. These houses, mostly irregular, are increasing the vulnerability of the rest of the population as well. The lack of inspection procedures on the part of the government is rendering the population vulnerable to risks. Apart from having reduced access to land, vulnerable families see the bureaucratic processes of land tenure as an impediment for them to legalise their houses. In most cases, low financial capacity doesn't allow families to construct houses in safer places or build them with higher quality materials.

2 LIMITED ACCESS TO WATER SUPPLY

In the rural RTU of Santa Cruz, limited access to water supply was identified as one of the main issues, especially when compared with other populations that live in remote areas. Water piping projects led by the local government are considered effective as there is sufficient funding allocated from the central government. Other

water access projects have been supported by international institutions, but respondents cited the reduced technical capacity of local governments to maintain the projects once they are handed over, which jeopardises the long-term sustainability of these interventions.

The challenging conditions in rural areas force many farmers to migrate into urban areas, particularly Praia. Many of these migrants, often rural poor, settle down in deprived marginal urban and semi-urban areas in poor housing and under challenging socioeconomic conditions. It is in these areas that many respondents reported a lack of access to clean water sources.

3 POOR DRAINAGE/ WATER DISPOSAL

Poor drainage systems lead to floods during the rainy season and present health risks in terms of infectious diseases year around. Survey respondents reported that the local government built dikes around flooding areas. However, this measure was criticised for the lack of a comprehensive approach, as it fails to take care of waste accumulation, which causes channel blockage leading to overflows in the case of rainstorms. The local government has also worked to rehabilitate degraded neighbourhoods, including demolition in some cases. These measures were valued as only somewhat effective for not having enough capacities and resources.

Persons interviewed in Praia highlighted the challenges of inappropriate waste management, meaning that waste is often left in inadequate sewage systems or other unsafe deposit areas. During the rainy season this causes blockage of sewage systems, often resulting in floods. Additionally, inappropriate collection of waste poses a threat to general public health due to the risk of epidemics.

Efforts from the local government to address the situation were identified by respondents. Municipal Guards have served as monitoring agents in the field to control and announce irregularity at an early stage. The municipal chamber has developed several projects in order to mitigate disaster, in particular the construction of water drainage systems and the reorganisation of neighbourhoods, among other initiatives. However, limited planning capacity within municipalities and the local government limits the effectiveness of these actions. Initiatives have been taken to improve the situation of marginalised urban populations, including the UN-HABITAT Sustainable Urbanisation Participatory Slum Upgrading Programme, which was valued as very effective by respondents. On the whole, however, limited progress has been made to decrease the exposure of populations to risks resulting from poor planning, both urban and rural.

4 POORLY BUILT HOUSING

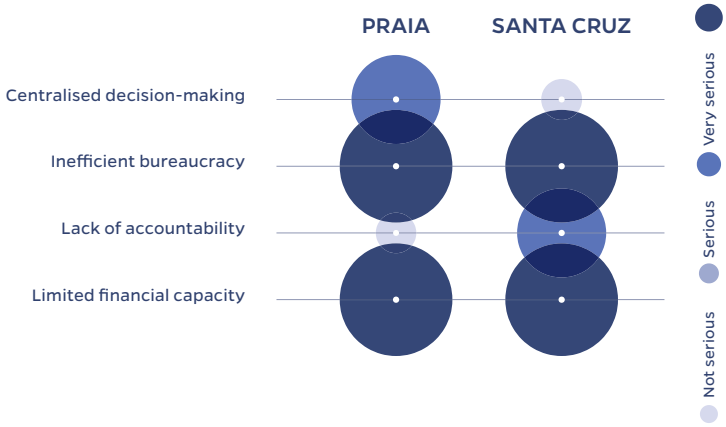
Poor construction of homes is in part a result of poverty and unemployment, and exposure to hazards is further increased due to a lack of public infrastructure and services. In Cape Verde, urbanisation is occurring at a very rapid rate, putting pressure on the public administration's capacity to ensure that migrants can settle in safe places where services in terms of water supply, drainage and electricity are provided. This situation is prevalent, as there is an absence of control and monitoring by relevant authorities of the quality of building materials. Respondents have also reported houses being flooded and destroyed in the rainy season. The lack of proper drainage systems and roads can lead to flooding and the spread of diseases. General construction policies have been defined, but respondents comment that they are not as effective as they should be because of the reduced technical capacity and funding, which are necessary in order to enforce regulations.

Local Perceptions on Risk Driver 4

Governance

Respondents in Cape Verde selected a high number of governance indicators as being of serious concern. In particular, inefficient bureaucracy, limited financial capacity, centralised decision-making, and lack of accountability were identified. Non-compliance with law was a particular concern in Praia, partly because regulatory challenges have become more evident in the fast-growing migrant neighbourhoods.

GOVERNANCE CHALLENGES IN PRAIA AND SANTA CRUZ



1 CENTRALISED DECISION-MAKING AND LACK OF ACCOUNTABILITY

Respondents selected centralised governance and lack of accountability as key issues. Inefficient administration and the limited capacity to delegate and make decision-making processes inclusive were also highlighted. Survey respondents felt that technical capacities of the local administration would need to be improved before any decentralisation process is put in place. Regarding the issue of centralised decision-making, government and local chambers are criticised for not working jointly in order to give DRR strategies more relevance in the political agenda. However, some respondents noted that in crisis situations, institutional coordination has indeed been somewhat effective.

Respondents clearly expressed that more informative campaigns and studies need to be conducted for a better understanding of the country's vulnerability. Legislative framework has established the scope, definitions, principles and domains, rules, and contingency and disaster plans, while also determining who is responsible for the direction and coordination of these policies. However, respondents claim that there should be more bottom-up communication to ensure that their voice is heard and that greater transparency and accountability on the part of the authorities is needed. They further stated that there are too many policies and not enough solutions.

Greenpeace / Christian Åslund

2 INEFFICIENT BUREAUCRACY

Inefficient bureaucracy, including slow decision-making processes and cumbersome procedures, was considered the most serious issue among all governance factors, in part because it results in aid programmes taking longer to reach beneficiaries, respondents stated. Government interventions such as the computerisation of national and local level administration, supported by external funding coming from international partnerships, was valued as extremely effective by respondents.

3 LIMITED FINANCIAL CAPACITY

Limited financial capacity also represented one of the primary concerns, as municipalities and other entities often lack sufficient resources to invest in necessary measures. Apart from the evident external dependency of Cape Verde's economy, respondents claim that funding is not reaching vulnerable groups in a sufficient manner and that the population is not included in the decision-making process. Additionally, the distribution of national funds is argued to be inequitable as more funding has been allocated to urban areas than to rural areas (e.g. health centres).

Recommendations from PRAIA

1 INCREASING KNOWLEDGE AND AWARENESS ON ENVIRONMENT AND NATURAL RESOURCES

- Carry out more **TECHNICAL STUDIES AND RESEARCH** to help identify **REALISTIC SOLUTIONS**
- **IMPROVE CIVIC EDUCATION** with more extensive environmental education programming and awareness-raising efforts on **ENVIRONMENTAL ISSUES**

2 BUILDING SOCIOECONOMIC RESILIENCE

- Undertake **RISK MAPPING**
- Futher develop **EMERGENCY AND CONTINGENCY PLANS** and improve public awareness of these plans
- Create overall greater **CULTURE OF PREVENTION**

3 IMPROVING LAND USE AND THE BUILT ENVIRONMENT

- Draft and enforce **BUILDING CODES**
- Devote more resources to **IMPROVE AND EXPAND INFRASTRUCTURE**
- Undertake activities around **REFORESTATION AND RAINWATER RETENTION**

4 IMPROVING GOVERNANCE

- Create **MORE PARTNERSHIPS** between the national and local governments and NGOs
- **IMPROVE ACCOUNTABILITY** in government
- Improve the **ENFORCEMENT OF LAWS**

the RTUs

SANTA CRUZ

- **IMPROVE CIVIC EDUCATION,** and **RAISE AWARENESS** around the issue of **COASTAL EROSION** and the **RISKS POSED BY SAND EXTRACTION,** as well as on **THE RATIONAL USE OF WATER**

- Draft **LABOUR LAWS** that would promote more **SOCIAL INTEGRATION**, as well as **LIVELIHOODS INITIATIVES** to encourage rural populations to remain in rural areas.
- Make **HEALTH SERVICES MORE AFFORDABLE** and thus accessible
- Invest in **PROFESSIONAL DEVELOPMENT OPPORTUNITIES**

- Update and enforce **BUILDING CODES**
- Improve the **PUBLIC WATER SUPPLY**
- Address the **HIGH COST OF LAND OWNERSHIP**
- Promote **REFORESTATION** to address the problem of **SOIL EROSION** and the risk from **LANDSLIDES**

- Create **MORE PARTNERSHIPS** between the national and local governments and NGOs

Key CHALLENGES

Cape Verde has taken important steps to address its environmental challenges and pursue disaster risk reduction efforts. Environmental education, modernisation of production techniques, retention of rainwater practices, and reforestation are some of the measures developed over the last decade. The creation of the General Office for the Environment, as well as other government agencies such as the Ministry of Rural Development, the Institute of Meteorology and Geophysics, together with the involvement of communities and the creation of more municipal offices in remote areas are all significant contributions.

More effective interventions, both at the level of policy, legal frameworks, and activities need to be undertaken. This is particularly of concern in the areas of water usage and availability, urban and territorial planning, and reducing vulnerability in coastal areas. Climate change adaptation likewise needs to be made an integral part of development planning. In addition, it is crucial that Cape Verde address the issues facing its rural communities in order to improve their livelihoods opportunities, while also addressing the issue of out-migration to the capital. Irrigation and environmental actions related to soil conservation are of crucial importance here.

THE GAMBIA

THE PRIMARY HAZARDS FACING **GAMBIA** ARE DROUGHT, FLOODS AND STORMS

FLOODS OCCUR WITH THE **MOST REGULAR** FREQUENCY

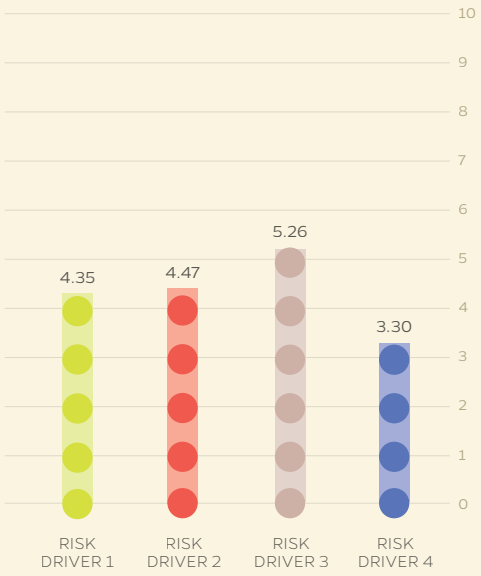
INSECT INFESTATION IS ALSO AN IMPORTANT THREAT, PARTICULARLY IN TERMS OF ECONOMIC DAMAGES

DROUGHTS HAVE AFFECTED THE MOST **NUMBER OF PEOPLE** BY FAR, FOLLOWED BY FLOODS

EPIDEMICS HAVE RESULTED IN THE **HIGHEST NUMBER** OF DEATHS, AGAIN FOLLOWED BY FLOODS

Source: EM-DAT (CRED)

GAMBIA SCORES FROM WEST AFRICA RISK MAPPING



INSTITUTIONAL Capacity for DRR

DRR Institutional Setup
AND LEADERSHIP

Gambia has recognised disaster management as important to its development and has taken measures to build its capacity and resilience in the face of disasters. The Gambia's Vision 2020 strategy, launched in 1996, identified the need for a Disaster Preparedness Plan in order to achieve its development goals, and in 1997, Gambia established the National Disaster, Emergency Relief and Resettlement Committee (NDERRC), led by the Vice President. The National Environmental Protection Agency includes Disaster Preparedness and Contingency Planning as one of its programme areas, and disaster issues were included in the Gambia Environmental Action Plans (GEAP) Phase I and II. Disaster issues have also been included in the Rio+20 Republic of The Gambia National Report 2012 and The Gambia Programme for Accelerated Growth and Employment (PAGE) 2012.

At the national level, Gambia has established the National Disaster Management and food security governing council (NDMC), the disaster management and climate change adaptation platform and the National Disaster Management Agency (NDMA). The NDMC is headed by the Vice President and includes the sector ministries and the Solicitor General. It advises the government on disaster management and develops and ensures the implementation of strategies and policies. Furthermore, it advises the President on aid needs, agreements and state of emergency declarations, and helps determine the number of police force and armed force members to be deployed in the event of a disaster. The NDMA is headed by an Executive Director and acts as the secretariat for the National Disaster Management and food security governing Council. In 2011, the NDMA launched a collaboration portal between the regional staff and main office to increase information sharing and collaboration. The NDMA is responsible for administrative matters related to disaster management and prevention and ensures policies and strategies are implemented at the national and local levels.

The Gambia National Contingency Plan was created in 2011 to enhance the effectiveness of disaster preparedness and risk reduction. Measures include an early warning system; capacity strengthening at the regional, district and community levels; geographic information systems; regional and sectoral contingency plans; and equipment and training at the national, regional and local

levels. Moreover, it includes partnerships, community participation and sustainability as important components to its implementation. The NDMA is responsible for the coordination and monitoring of the Contingency Plan.

In March 2011, The Gambia launched its National Platform for DRR, with the NDMA acting as the focal point and secretariat for the National Platform. The National Platform serves to ensure the implementation of the National Contingency Plan in the various sectors. The Plan also guarantees that disaster risk reduction activities included in the Contingency Plan are streamlined into the development planning activities of the Ministry and the Programme for Accelerated Growth and Development (PAGE).

At the regional level, Gambia has established Regional Disaster Management Committees (RDMC). These committees are chaired by the mayor or governor and are responsible for the implementation of the National Disaster Plan in the region. Regional Disaster Management Coordinators assist the RDMCs with the preparation of the regional disaster management plans. At the district level, Gambia has established District Disaster Management Committees assisted by District Disaster Management Coordinators.

The overuse of wood fuel as an energy source in Gambia is contributing to the destruction of forest resources and natural vegetation cover, leading to an increased risk of desertification.

Strategic

DOCUMENTS AND PLANS

Gambia developed the National Disaster Management Programme Strategic Plan, 2008-2011, to lay out the steps and actions needed to implement the National Disaster Management Policy (2007) and the 2008 National Disaster Management Bill, the National Disaster Management Policy outlines strategies, areas for intervention, and institutional structures and agencies to implement disaster plans. It also includes a strategy for financing. The National Disaster Management Bill established a National Disaster Fund, the National Disaster Management Council and Agency, regional and district disaster management committees, an Executive Director responsible for the administration of disaster management, and the development of disaster management plans at the national, regional, district, and local levels. The National Disaster Management Programme Strategic Plan strives to provide a multidimensional strategy and balance prevention, preparedness, mitigation and response in Gambia's approach to disaster management.

In its 2007 National Adaptation Programme of Action (NAPA), Gambia identified the main climate related hazards as floods, storms, droughts, cold spells, intra-seasonal-drought, heat waves and unseasonal rains. The NAPA includes three key sectors: economic (agriculture, fisheries, energy), natural resources (water and forest resources), and social (health). The NAPA identified the need to address meningitis, malaria, and cholera outbreaks and the creation of surveillance and detection systems for emergent and new diseases. The NAPA also identified the need for early warning systems, infrastructure improvements for drainage, land use zoning, and efficient drought relief. Ten priority projects were listed, including the Rehabilitation of Early Warning Systems on Climate-Related Natural Hazards and the Reduction of Climate Change Related Diseases, both of which are focused on disaster risk management. The other priority projects address issues related to the ecosystem, climate change, food security and livelihoods, poverty, technology, and inadequate strategies for the incremental effects of climate change.

Gambia's Poverty Reduction Strategy Paper (PRSP II), 2007-2011, acknowledges the exploitation of natural resources, and the need to conserve them, along with the promotion of a well-balanced ecosystem. It also mentions the National Vision 2020 and its identification of the need for the development of a community based disaster preparedness plan as one of the main challenges for Gambia. The PRSP II notes that the overuse of wood fuel as an energy source in Gambia is causing the destruction of forest resources and natural vegetation cover, leading to desertification and the subsequent negative impacts on food production. It also lists soil erosion and decreasing soil fertility as constraints on agriculture.

International

ENGAGEMENT AND SUPPORT

The 2012-2016 United Nations Development Assistance Framework (UNDAF) included the establishment of a national climate change and disaster risk reduction information system as one of its country programme outcomes.
The World Food Programme (WFP) has supported Gambia through the 2012 Emergency Operation (EMOP) that supported farming communities during the Sahel food crisis (2011- 2012) with food distributions, supplementary feeding for young children and cash transfers. Currently, the WFP is implementing the Protracted Relief and Recovery Operation (PRRO), which supports communities suffering from crop failure and floods by combating malnutrition in children and pregnant and nursing women, rebuilding livelihoods, and enhancing the capacity of the government in emergency preparedness and response. In terms of DRR, the WFP provides support to the government by providing capacity building for contingency planning, emergency preparedness, needs assessment and immediate relief assistance at the central and regional levels. The agency also produces a quarterly Food Security and Market Information Bulletin to provide information to decision-makers on various issues: agricultural production; food trade and price trends: groups most vulnerable to food insecurity; climate forecasts; and vulnerability trends.
Other organisations implementing projects related to disaster management and climate change include the European Union (UE), International Fund for Agricultural Development (IFAD), the World Bank (WB), and the United Nations Development Programme (UNDP). The Drainage, Sanitation, and Waste Management Interventions for Flood Prevention in Gambia, supported by the EU, aims to mitigate the impacts of flooding through improvements to the drainage and sanitation infrastructure in seven urban areas that have been identified as vulnerable. The IFAD is implementing the Participatory Integrated-Watershed Management Project to increase rural communities' capacities to sustainably manage watersheds. It also provides resources for the implementation of watershed management plans. The Adaptation to Climate Change project, supported by the UNDP and the Global Environmental Facility, aims to build vulnerable communities' resilience to climate change impacts on coastal resources.

UNDERLYING Risk Factors: Local Perceptions

RTUs Selected

AND SUPPORTING RATIONALE

The RRI in Gambia looked at two Representative Territorial Units (RTUs), each of which differ in terms of risks, geographic location and levels of urbanisation and economic development. The Greater Banjul Area, the capital, is a western coastal urban area, while the North Bank Region is a rural and subsistence agricultural region. The two RTUs attempt to cover, at least in part, the different types of geography, climate-related challenges, and natural hazards and risks that Gambia faces. The rural versus urban locations also provide a more comprehensive picture of the underlying risk factors affecting Gambians and the conditions in which they live that make them either more or less vulnerable to disasters.

Greater Banjul Area

The Greater Banjul Area is located in Western Gambia and consists of the City of Banjul and the Kanifing Municipal Council, occupying an area of 94 km² (less than 1% of the Gambia's land area). This RTU is in close proximity to the River Gambia and home to a population of 357,000 (26% of the country's population).

Banjul's status as the largest urban city in Gambia is slowly being eroded due to the emergence of Serrekunda, the Kanifing Municipality's capital. Throughout the 1990s and 2000s, the Kanifing Municipality grew to become the most commercial and populous centre in Gambia (since 1963, the population increased from less than 12,000 to 322,700 in 2003), with the country's major hotels and tourism facilities based there.

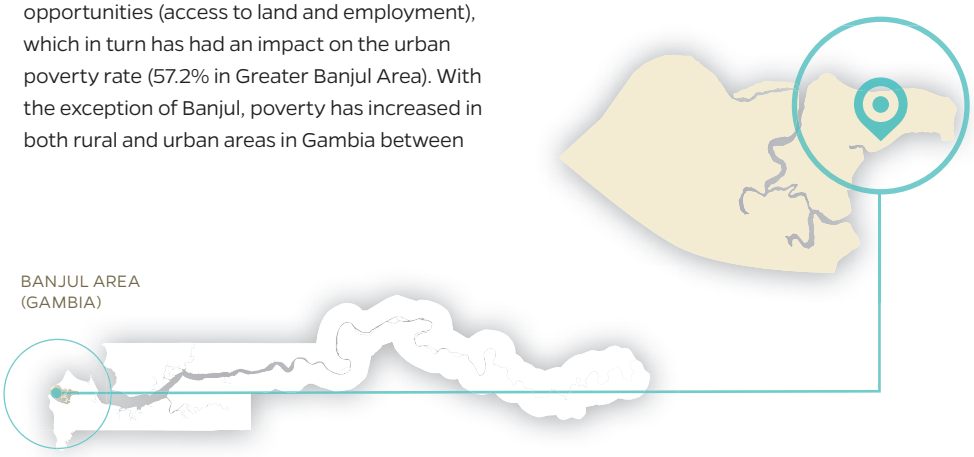
The rapid pace of urbanisation accompanied by inadequate storm water management systems and drainage facilities has significantly increased the overall vulnerability of this RTU to climate-related hazards, such as flash floods after heavy rains. In the 2010 rainy season, flash floods in the area affected more than 35,000 people, damaged 2,371 houses and impacted an unknown amount of food and cash crops. In addition, increasing urbanisation is putting pressure on basic social services (access to education and health) and economic opportunities (access to land and employment), which in turn has had an impact on the urban poverty rate (57.2% in Greater Banjul Area). With the exception of Banjul, poverty has increased in both rural and urban areas in Gambia between 1992 and 2003.

The Greater Banjul Area is primarily low-lying and sea level rise and coastal erosion present serious long-term challenges to development. Groundwater is at risk of increased salinisation, and shallow coastal aquifers could diminish, which would affect fresh water supplies and peri-urban agriculture. In some areas of the Greater Banjul Area, the beach has been retreating at a rate of 1-2 meters per year due to coastal erosion. The impact of sea level rise and coastal erosion has potentially negative effects on the tourism industry, the artisanal fisheries sector and associated livelihoods. These are critical to the economy of the country as Gambia possesses only a minimal manufacturing sector and limited commercial mineral resources.

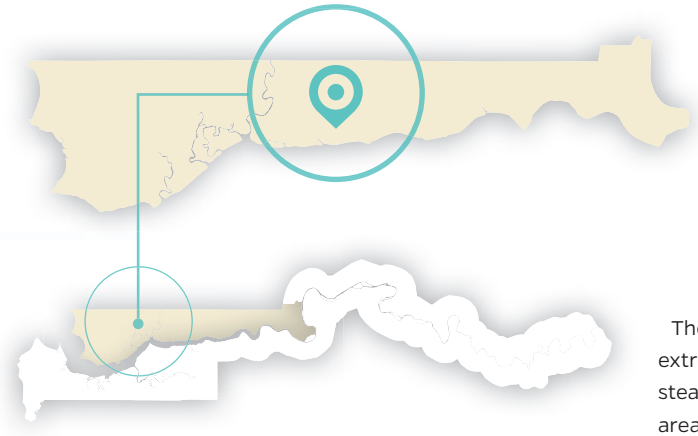
RTU Greater Banjul Area

HOUSING IN DANGEROUS LOCATIONS

INCREASES PEOPLE'S EXPOSURE TO FLOODS AND LANDSLIDES, WITH THE POTENTIAL FOR LOSS OF HUMAN LIVES AND ECONOMIC ASSETS IN URBAN AREAS



RTU NORTH BANK REGION
(GAMBIA)



RTU North Bank Region

DEFORESTATION
CONTRIBUTES TO A GREATER RISK OF FLOODING AND SOIL EROSION, AS WELL AS REDUCED PROTECTION FROM WINDSTORMS

North Bank Region

This RTU is located on the Northern Bank of the River Gambia and is comprised of six districts with a total population of 174,835. Until the expansion of the ferry services to Barra and the construction of the bridge across Mini Minyang Bolon at Kerewan, the North Bank Region suffered from a lack of access to Banjul.

Agriculture is the primary source of livelihood in the country. It employs more than 68% of the workforce, accounts for approximately 40% of Gambia's export earnings and makes up around 26% of the GDP. In the North Bank Region, agriculture is predominantly subsistence and rainfed, with farmers relying on traditional shifting cultivation and livestock management practices. Grains (millet) and groundnuts, and to a lesser extent maize and rice, are the main crops cultivated. Horticulture, extensive livestock farming (especially small ruminants and poultry), charcoal and salt production, and firewood selling are other economic activities. Challenges around the marketing of farm produce often pose serious problems, especially for female vegetable growers. The main constraints in sustaining their production efforts are the lack of proper storage facilities, poor timing of production, long distances to the nearest market and the lack of reliable means of transportation.

The North Bank Region is experiencing extreme forest and soil degradation and a steady decrease in natural resources. Cropland area has increased from less than 100,000 hectares to over 300,000 at the expense of natural woodland and wetland ecosystems. Over the last 50 years, increasing numbers of livestock, in combination with soil degrading farming practices, have put pressure on the lands available for food and fodder production, forcing farmers and herders to encroach on forests to extend farmlands and grazing areas. Furthermore, clearance for settlements and infrastructure development in forest areas occurs without appropriate environmental consideration. Uncontrolled felling for timber and collection of firewood, as well as unsustainable harvesting of forest products for domestic use is common in this RTU.

Gambia's climate is semi-arid with a relatively short rainy season and erratic rainfall, causing periodic but frequent droughts and vagaries of climate. In the North Bank Region, the rainy season is especially poor, both in terms of total amount and spatial distribution, and yields are thus generally low. The rainy season in 2011 and 2012 ended earlier than normal, which led to widespread crop failure. Serious floods followed in many parts of the country during the 2012 harvesting season, further aggravating food insecurity and poverty conditions in Gambia. The country's poverty rate averaged 63.3% in rural areas. Households headed by females and located in rural areas are most likely to be poor. Female-headed households make up 18% of all rural households, with about 63% falling below the poverty line, compared to 48% of male-headed households.

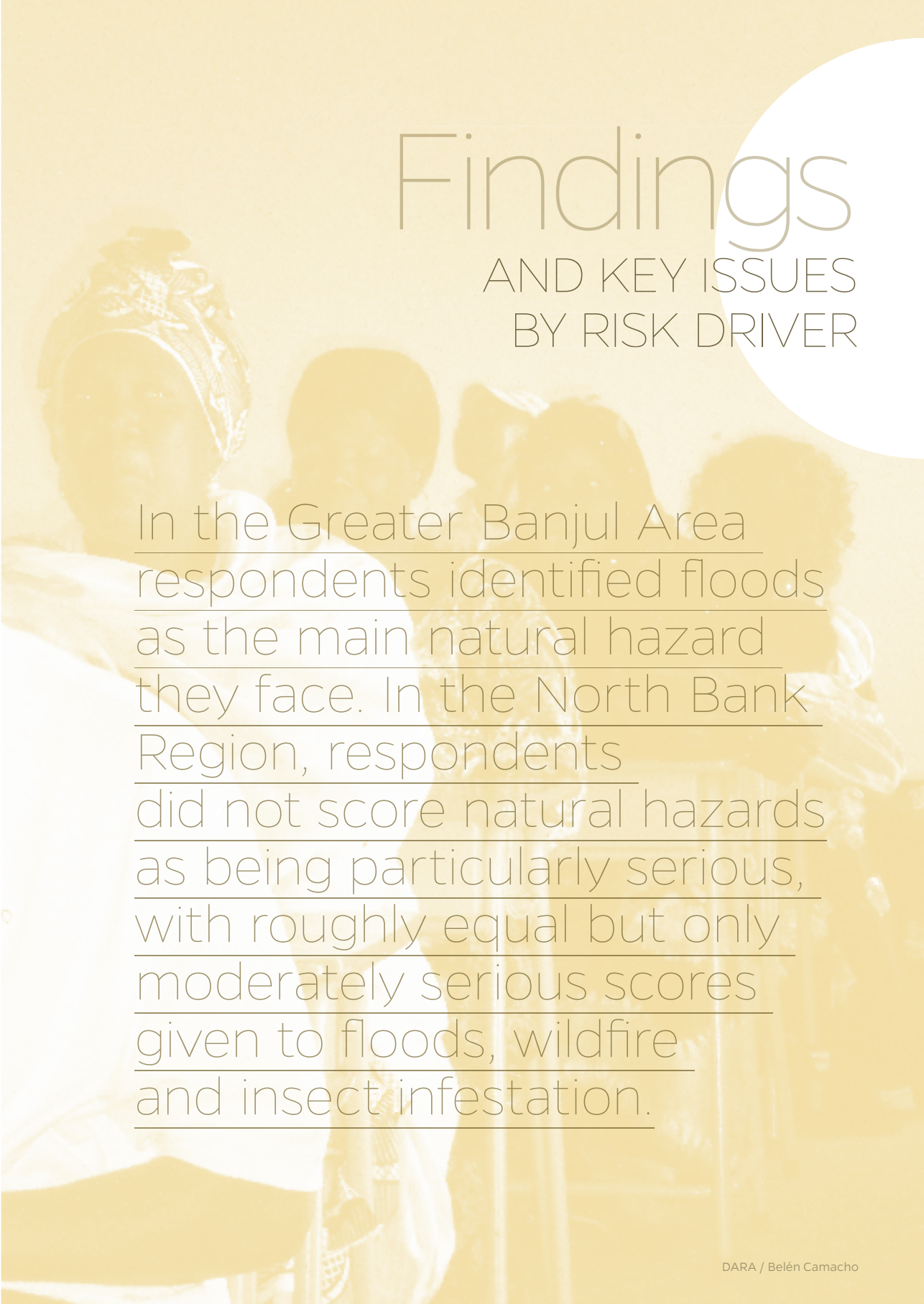
NATURAL HAZARDS AND UNDERLYING RISK FACTORS OF SELECTED RTUS

	GREATER BANJUL (URBAN)	NORTH BANK (RURAL)
NATURAL HAZARDS	FLOODS	NONE SELECTED
RISK DRIVER 1 1	· Coastal erosion · Deforestation	· Deforestation · Soil erosion
RISK DRIVER 2 2	· In-migration · Limited access to land · Poverty · Unemployment	· Food insecurity · Low levels of literacy · Out-migration · Poverty · Prevalence of infectious diseases · Unemployment
RISK DRIVER 3 3	· Housing in dangerous locations · Overcrowded conditions · Poorly built housing · Poor drainage/water disposal	· Housing in dangerous locations · Poorly built housing · Poor drainage/water disposal
RISK DRIVER 4 4	· Corruption · Limited financial capacity	· Corruption · Lack of human capacity · Lack of accountability · Limited financial capacity

Findings

AND KEY ISSUES BY RISK DRIVER

In the Greater Banjul Area respondents identified floods as the main natural hazard they face. In the North Bank Region, respondents did not score natural hazards as being particularly serious, with roughly equal but only moderately serious scores given to floods, wildfire and insect infestation.



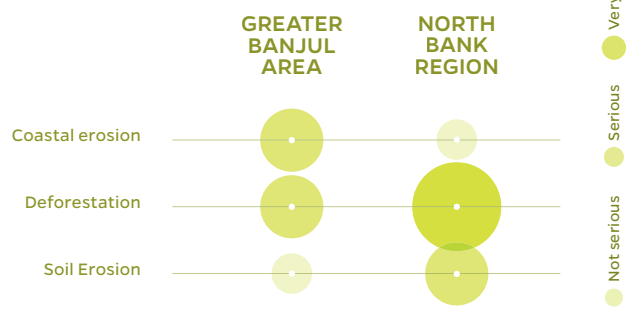
DARA / Belén Camacho

Local Perceptions on Risk Driver 1

Environmental and Natural Resources

Deforestation was found to be the main environmental challenge in the North Bank Region, followed by soil erosion. In the Greater Banjul Area, coastal erosion was highlighted as a main environmental concern as much of the territory is surrounded by the River Gambia. Within the Greater Banjul RTU, deforestation was considered a concern specifically in the Kanifing Municipality, which is a major commercial area with industrial development initiatives taking place.

ENVIRONMENTAL CHALLENGES IN GREATER BANJUL AREA AND NORTH BANK REGION



1 COASTAL EROSION

Coastal erosion was identified by respondents in Greater Banjul Area as one of the consequences of deforestation, resulting in diminished coastline vegetation that is integral in protecting the coast from rain and wind storms. Sand mining practices have also exacerbated erosion, changing the natural coastal sedimentation-erosion dynamics. Coastal erosion has also been identified as a threat to the buildings located along the coast, which in turn increases the area's economic vulnerability and negatively impacts the tourism industry as it affects the stability of beaches, hotels and transport infrastructure. Thus, the livelihoods of some families are threatened, and in some cases they are forced to relocate.

Through support from the government, communities and NGOs have developed sensitisation campaigns on the dangers and impacts associated with coastal erosion and how to improve community coping capacities. The National Environmental Agency (NEA) has forbidden sand mining activities in some areas to allow for natural regeneration. Other initiatives such as mangrove planting have also been promoted by local and national authorities and supported by families from the local areas. These were rated as somewhat effective by respondents. A coastal protection project was also put in place by the national authorities, which received high levels of participation from the communities. The project was considered to be effective but was also criticised for its low quality and the limited funding available.

2 DEFORESTATION

Many respondents in the North Bank Region pointed to wildfires as the most significant cause of deforestation. Respondents agree that reduced soil fertility and lowered agricultural production are often direct results of deforestation. Other consequences identified were the effects on the local rainfall patterns and the reduced protection from windstorms, increasing flooding and erosion.

Households in the Greater Banjul Area and the North Bank Region are engaged in tree planting activities through small-scale initiatives, including coconut and mangrove tree planting along riverbanks. In partnership with NGOs, communities in the North Bank Region have also organised themselves to monitor wildfires and promote sensitisation sessions to raise awareness on the negative impacts of environmental degradation and sustainable options to use firewood, such as improved cooking stoves.

Local authorities have enacted by-laws to control forest management and illegal logging. Tree planting activities have been put in place in both RTUs, and have been provided with additional funding and expertise. These activities were valued as very effective. Interventions led by the national government have included the provision of seedlings for reforestation activities. These were valued as somewhat effective but criticised for the reduced allocation of human resources to monitor the activities. The Gambian government enacted a Forestry Act to regulate protection and forest management, which has been valued by respondents as minimally effective due to reduced funding and incomplete enforcement. This is directly related to the limited degree of community participation. Respondents found the Anti-Wildfire Programme to be very effective because of the high degree of community organisation, which was seen as critical to the success of the programme.

3 SOIL EROSION

Respondents in the North Bank Region are aware of the direct relationship of soil erosion with deforestation. Soil erosion leads to soil infertility and low production as nutrient-rich top soil layers are washed away. To promote soil retention, farmers are adopting best agricultural practices such as crop rotation and strip cropping (planting crops in strips across the slope), as well as tree planting.

Local authorities are encouraging farmers to practice contour ploughing to help prevent erosion, especially in the event of rainstorms. Contour bunding is associated with the ploughing and placing of stones around the contours of slopes. This has achieved positive results and is rated as effective. Both tree planting and contour bunding have been introduced through agricultural extension education programmes led by the national government.

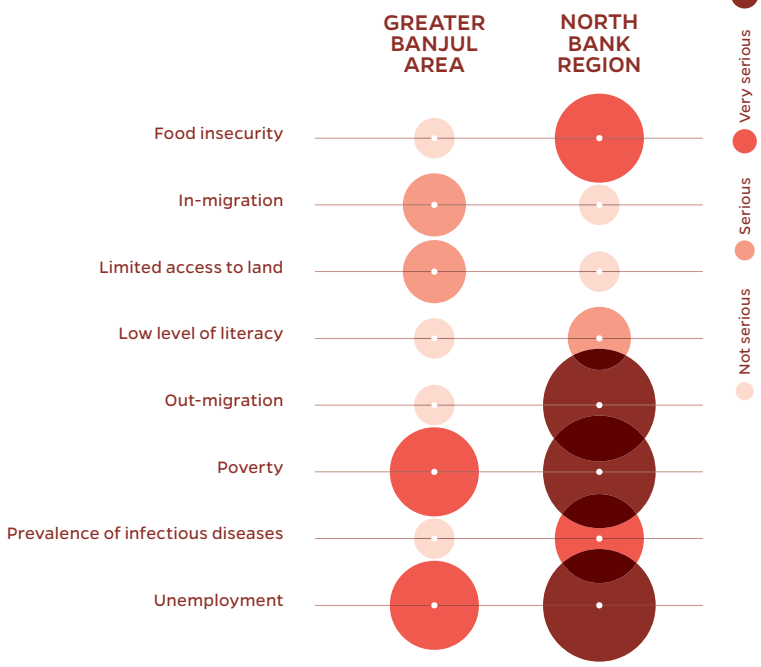
At the national level, the government is promoting tree planting; however, low soil fertility and high degrees of deforestation have hampered effectiveness. Further measures to improve fertility will be needed before reforestation can be successful. The Participatory Integrated Watershed Management project (PIWAMP), funded by IFAD and the African Development Bank (AfDB), was launched in 2006 by the national government with the objective of increasing sustainable land productivity in Gambia. It was the initiative that respondents most positively valued.

Local Perceptions on Risk Driver 2

Socioeconomic Conditions

Poverty, unemployment, limited access to land, and in-migration are the main socioeconomic challenges in the Greater Banjul Area. Comparatively, unemployment, poverty, out-migration, food insecurity, low levels of literacy, and the prevalence of infectious diseases are the challenges identified in the North Bank Region. Unemployment and poverty were the key socioeconomic concerns highlighted in both RTUs.

SOCIAL AND ECONOMIC CHALLENGES IN GREATER BANJUL AREA AND NORTH BANK REGION



FOOD INSECURITY

Respondents in the North Bank Region linked food insecurity with malnutrition, infertility and subsequently a weak labour force. They also viewed forest encroachment as a consequence of the need to increase agricultural land to meet demand. To reduce vulnerability to food insecurity, families grow their own crops (early maturing crops if possible), diversify food production and rear livestock. Other strategies employed by families are small income-generating activities to increase the family income.

The national government has distributed seeds (early growing millets) and agriculture inputs such as fertilizer, while also promoting upland rice cultivation. Both measures have been viewed positively and were considered very effective interventions. Another initiative to reduce food insecurity was 'Operation Feed Yourself', launched in 2003 to encourage young Gambians in urban areas to return to rural areas to cultivate. This would in turn decrease dependence and control urban growth. The campaign was positively accepted and considered as effective by respondents,

although a lack of technical capacity from the government was highlighted. Other interventions such as skill development on vegetable production and new farming techniques were also identified.

2 IN-MIGRATION

In-migration in Greater Banjul was identified by respondents as a direct cause of high crime rates and increased pressure on food and shelter, as people are forced to relocate to dangerous and unsanitary areas. Respondents also indicated that the trend has reduced their employment opportunities and puts extra pressure on social services such as health and education.

To address this issue, communities are discouraging youth from relocating to urban areas. This fits into the larger tendency of "decentralisation", a development policy that aims to reduce overcrowding in capital cities while guaranteeing better access to social services throughout the rest of the country, which is mostly rural. Decentralisation initiatives have been positively accepted by respondents, who consider them to be somewhat effective and a good way of alleviating pressure on social services. In urban areas, local authorities of Banjul are also providing housing for displaced people, a decision considered to be very effective.

3 LIMITED ACCESS TO LAND

Limited access to land is affecting access to farmland, which subsequently impacts food security. Social infrastructure projects such as schools and hospitals are also affected, resulting in reduced social welfare in overcrowded areas in Greater Banjul. The lack of access to land is pushing people toward disaster-prone areas and causing overcrowding in existing neighbourhoods.

National institutions have introduced low-cost housing schemes, which have been deemed minimally effective by respondents due to insufficient funding. The central government's decentralisation initiatives are considered to be somewhat effective as they could help reduce pressure on social services in the cities.

4 LOW LEVELS OF LITERACY

Respondents in the North Bank recognised low levels of literacy as an obstacle for communications on risk prevention, thereby increasing vulnerability as written materials for DRR campaigns would be ineffective. Communities have engaged in adult learning and literacy programmes with the support of international organisations. These have been considered as somewhat effective by respondents as the programmes have helped build schools and increased coordination amongst actors.

The national government has also put in place adult learning programmes for functional literacy, with the aim of training Gambians to manage daily living and employment tasks that require reading skills beyond a basic level. These initiatives were valued as very effective by respondents. The government has established skill training centres that provide qualified training for youth, and local governments have developed cross-sectorial training programmes. These measures were also highly valued by respondents.

Local Perceptions on Risk Driver 2

Socioeconomic Conditions

5 OUT-MIGRATION

In the North Bank, out-migration is linked to the lack of labour opportunities for young people in rural areas, affecting the workforce and causing a decline in local production and capacity. In collaboration with international organisations, the communities are advising people, especially the youth, on the dangers associated with out-migration through awareness campaigns. Horticulture training programmes have also been developed to encourage farming in this rural RTU.

Through the 'No Back Way to Europe' campaign, the government, in collaboration with the country's immigration department and police force, provides farmers with different agricultural inputs and loans for government land. It aims to discourage young farmers from illegally emigrating by providing them with tools to increase agricultural production. This project was valued as minimally effective by respondents as they believe that there are still major regional challenges that the project fails to address. International organisations are also facilitating youth enterprise development. This was valued as a very effective intervention as most of the trainings have resulted in an increase in job opportunities.

6 POVERTY

When addressing hunger and living standards, respondents stated that their basic needs are not fully met. They highlighted that the recent food crisis and flooding in Gambia has affected the poorest sections of vulnerable communities, rendering them even more vulnerable and exposed to risk in both rural and urban areas. Respondents in the North Bank Region link poverty levels to the high rates of unemployment and commented that the communities in this RTU are highly dependent on the government. In response, they are embarking on community-based interventions to reduce poverty, such as the establishment of women-led vegetable gardens. These were considered to be very effective as they reduce community vulnerability to volatile food prices.

In the Greater Banjul Area the local government has created credit facilities through microfinance projects, which have been assessed as effective, but are criticised at the same time given the increasing unemployment rate. National institutions have also developed several projects under their employment creation policies. These include skill development centres focused on youth and female self-employment, microfinance services, enterprise development and livelihoods projects. Respondents see these as somewhat effective as they have received political commitment and adequate financial and technical resources. In the North Bank Region, respondents valued the presence of international organisations engaged in microfinance projects, which they view as very effective. Additionally, people mentioned government interventions, such as the provision of improved production methods and the implementation of a rural finance framework, as somewhat effective and highlighted that these initiatives were beneficiary inclusive.

7 PREVALENCE OF INFECTIOUS DISEASES

Infectious diseases are seen in the North Bank Region as a factor that affects farmers' productivity, increasing their vulnerability to food insecurity in the long-term. Communities use preventive methods such as prophylactics and bed nets to avoid infection.

International organisations such as the Global Fund against HIV/AIDS, Malaria and Tuberculosis and the Ministry of Health and Social Welfare are providing communities with bed nets. This is seen as a very effective measure targeting a specific problem. International organisations have also implemented sensitisation campaigns on environmental conditions that increase disease transmission. The national government is providing clean drinking water, which is considered to be a very effective intervention; however, further technical capacity and funding is believed to be needed.

8 UNEMPLOYMENT

Respondents in the North Bank Region affirmed that unemployment is causing a high rate of out-migration, forcing youth to relocate to the capital city. In the Greater Banjul Area, however, one of the most frequently mentioned consequences of unemployment is the increased crime rate.

To overcome the high unemployment rate, families engage in small business and gardening and try to access microfinance sources to diversify income and reduce economic vulnerability. Communities also seek support from the government, NGOs and remittances.

At the local level in both RTUs, skill training centres have been created, but respondents assess them as minimally effective due to the exclusion of the most vulnerable, inefficient use of funds, and the inability to find jobs after training given the small size of the job market.

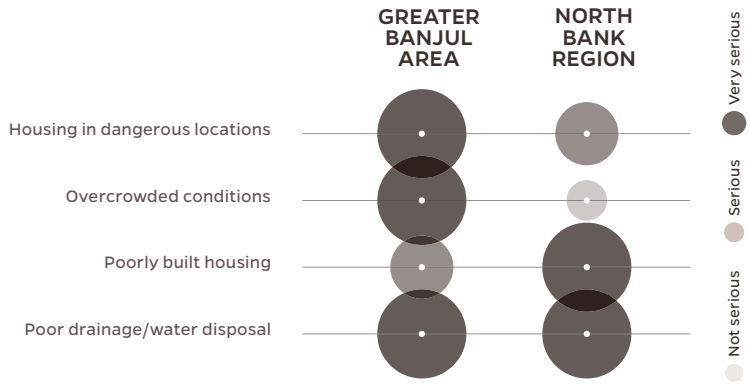
The national government, in collaboration with NGOs, has developed activities towards youth training on enterprise development; however, these are considered to be minimally effective given the need for further funding and broader outreach to youth. The PRSP and the EU- funded PAGE are in place 'to address unemployment and poverty'. Both are considered to be somewhat effective and dependent on political commitment. The Gambia Priority Employment Programme (GAMJOBS), funded by the UNDP, aims to create an enabling environment for employment creation. The programme was assessed by respondents as minimally effective, highlighting the need for further funding and community participation.

Local Perceptions on Risk Driver 3

Land Use and Built Environment

In both RTUs, the main land use and built environment challenges are poor drainage or water disposal and housing that is poorly built and/or in dangerous locations. Overcrowded conditions were also highlighted in the Greater Banjul Area.

LAND USE CHALLENGES IN GREATER BANJUL AREA AND NORTH BANK REGION



1 HOUSING IN DANGEROUS LOCATIONS

Building houses in dangerous locations, such as waterways and ditches, increases exposure to floods and landslides. During the rainy season many households in both RTUs experience flooding, causing some structures to collapse, risking human lives and increasing economic vulnerability. Many families repair their houses every year for the rainy season; however, this is only possible if there is a social network that provides support to the families. Those living in irregular settlements must often move temporarily to safer locations.

To address this issue, local councils have been raising awareness on the dangers of building in exposed areas, and the national government has implemented relocation policies and provided more solid materials, such as cement blocks, for reconstruction purposes. This has been valued by respondents as minimally effective, as some people are reluctant to move to a different setting with different conditions for their families. The materials provided have been criticised for not being produced locally, which would strengthen the economy. Additionally, relocation policies need additional funding in order to reach more beneficiaries, especially the most vulnerable.

Building codes do exist and the government has enacted a Planning Act. Some respondents, however, see these measures as minimally effective due to a lack of financial and human capacities needed for the effective enforcement of both regulations. A few respondents mentioned the eviction from unauthorised settlements, pointing out that the measure had been coherent with the approved legal framework. Additionally, sensitisation campaigns on the need to respect building codes have also been assessed as minimally effective. This is largely due to families' reduced access to technical and financial resources, as well as the low capacity of the Physical Planning Unit and other major stakeholders to enforce such policies on the ground.

2 OVERCROWDED CONDITIONS

Overcrowding in the Greater Banjul Area is generating increased pressure on roads and other congested transportation infrastructures. It is also increasing vulnerability to communicable diseases, mainly caused by the pressure on the already poor sanitation facilities. An additional consequence is the escalating crime rate.

Some respondents noted that the national government is making attempts to decentralise development. This measure could help reduce overcrowding in urban areas if the provision of social services and facilities were more widely spread throughout the country, especially reaching rural areas. However, the provision of public services in rural areas is still ineffective, and some respondents mentioned that further funding is needed in this respect.

3 POORLY BUILT HOUSING

Respondents in both RTUs stated that many houses are built with poor and unsuitable building materials and in dangerous locations. This is largely due to weak control mechanisms for buildings and a lack of coordination amongst the relevant authorities. Poor building materials lead to the overheating of houses as they often lack insulation. Furthermore, these poorly built houses are more susceptible to collapse during flooding, especially if they are located in dangerous locations.

Local governments have only recently started to monitor the location of houses in hazardous areas. Respondents, however, viewed this as only minimally effective. Local councils have also collaborated in the evacuation of victims in the case of emergency, which was again valued as minimally effective due to a lack of resources. To address hazard protection, the national government, with the support of international organizations, has established building codes along with the National Planning Act, which regulates housing amongst other activities. Yet these regulations lack appropriate enforcement, which, in the view of respondents, is linked to insufficient funding and the inefficiency of those responsible for their enforcement and monitoring. Finally, the national government is providing victims with financial aid to improve the quality of houses, or relocation in some cases. However, respondents stated that there is no real coordination between the relevant authorities behind the initiative.

4 DRAINAGE/ WATER DISPOSAL

The current drainage system in the Greater Banjul Area is said to be poorly planned and not properly maintained, causing flooding every year and leading to erosion and disease outbreaks. Other consequences are the flooding of main roads and water contamination.

North Bank communities are lobbying to get support from the government and other organisations on this issue, since communities lack the necessary technical capacity. In both RTUs, the communities have organised themselves to build local drainage systems as a temporary solution, but these are recognised to be minimally effective as this infrastructure needs further technical capacity for long-term sustainability. They have also organised regular cleaning exercises of the draining system to avoid mosquito breeding and to mitigate the potential risk of flooding. Pumps to drain water from compounds have been used and community sensitisation activities carried out on the need to avoid dumping garbage into the drainage system. These were assessed as very effective measures.

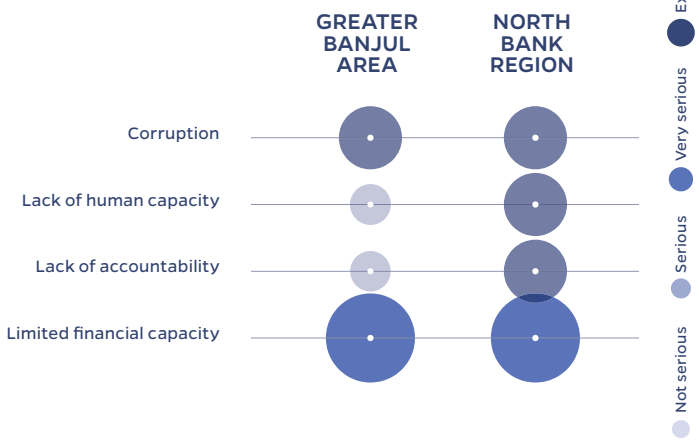
In the Greater Banjul Area, the national government is diverting water flows and using concrete slabs to build new waterways and drainage systems, while existing and new roads are being equipped with drains to avoid flooding. Although considered as somewhat effective, this measure requires further maintenance and integration into urban and rural planning. Additionally, the government is rehabilitating existing drainage. In general, these actions are considered to be effective, but respondents stated that further sensitisation is required for long-term sustainability of the infrastructure so that residents increase their sense of ownership and are concerned about the implications of their actions. Respondents also note that additional funding is required to maintain the infrastructure, along with the implementation of a waste management system, so that people have a sustainable alternative to dispose of their household waste.

Local Perceptions on Risk Driver 4

Governance

Limited financial capacity and corruption were the two key issues selected in both RTUs. In addition, in the North Bank region, lack of accountability and human capacity were also considered to be relevant challenges.

GOVERNANCE CHALLENGES IN GREATER BANJUL AREA AND NORTH BANK REGION



1 CORRUPTION

Respondents in the Greater Banjul Area and the North Bank Region understood corruption as a misuse of government funds that are not adequately accounted for and not spent in the right way, requiring further transparency and accountability from the government. Corruption increases communities' vulnerability as the diversion or misuse of funds prevents activities from being implemented, or causes activities to be delayed, poorly implemented or not completed in some cases.

In 2004, the national government created an Anticorruption Commission, which was valued positively as somewhat effective. The Commission was launched as part of the anti-corruption campaign "Operation No Comprise." Respondents link its effectiveness to the existence, reform and reinforcement of specific regulations enacted to fight against corruption such as the annual auditing exercises of public accounts and the legal trials of public officials who have had to face commissions of enquiry.

2 LACK OF HUMAN CAPACITY

North Bank respondents affirmed that the lack of human capacity is related to an insufficient workforce, leading to delays, inefficiency, or even project failure.

The local government manages scholarships and training programmes for youth, and while they are positively valued, respondents recognised that they lack technical know-how and funds. The national government has invested in the capacity-building of government departments and has supported the training of staff from District Assemblies. Both of these initiatives were found to be effective, as they have increased and

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strengthened human capacity at the local level. However, respondents claimed that adequate funding is needed for expansion and greater impact.

3 LACK OF ACCOUNTABILITY

Lack of accountability is intimately related with corruption. North Bank respondents specifically referred to the carelessness in governance of some institutions, which, amongst other consequences, can cause delays in project implementation.

Respondents perceive the auditing process of the administrative and financial management of public accounts as effective. The creation of the Public Accounts Committee of the National Assembly reflects the government's willingness to address this issue. Respondents mentioned that strict measures have been taken on decisions lacking accountability; however, institutional weakness remains a challenge. Roles and responsibilities within the Committee are clearly defined, signaling that there are internal technical capacities available to hold accountable those responsible for decisions related to spending and resource allocation.

4 LIMITED FINANCIAL CAPACITY

Limited financial capacity is seen as a major challenge for the implementation of plans. It causes delays and impedes on institutions' ability to address people's vulnerabilities in a more complete and sustainable manner.

The national government is currently supporting families through the provision of loans. While it has been reported that the low level of loan repayment is jeopardising the long-term sustainability of this funding source, the initiative has been very positively valued. The national government has thus solicited financial aid from international institutions, which might prove to be a temporary and effective solution. Nevertheless, further efforts from the government to reach more sustainable and longer-term solutions will be needed.

Recommendations from GREATER BANJUL

1 INCREASING KNOWLEDGE AND AWARENESS ON ENVIRONMENT AND NATURAL RESOURCES

- Involve communities in **MULTI-HAZARD RISK AND VULNERABILITY ASSESSMENT** exercise
- **STRENGTHEN POLICIES** on sand mining and cutting of mangroves
- Promote **TREE PLANTING** and mangrove conservation activities
- **RAISE AWARENESS** on environmental issues

2 BUILDING SOCIOECONOMIC RESILIENCE

- Establish and strengthen existing **SKILLS CENTRES**
- Create **MICRO FINANCE OPPORTUNITIES**
- Enhance **ECONOMIC ACTIVITIES** especially for young people
- Review and update existing **POLICIES AND LAND USE REGULATION**

3 IMPROVING LAND USE AND THE BUILT ENVIRONMENT

- **RELOCATE SETTLEMENTS** exposed to flooding risks
- Make provision of **AFFORDABLE HOUSING**
- Construct **PROPER DRAINAGE SYSTEMS**
- Reinforce **BUILDING REGULATION AND CODES**

4 IMPROVING GOVERNANCE

- Create an agency to **FIGHT AGAINST CORRUPTION**
- Strengthen the **PUBLIC ENTERPRISES COMMITTEES (PAC/ PEC)** of the National Assembly to improve accountability
- Decentralise **PLANNING AND BUDGETING**

the RTUs

NORTH BANK

- Identify **VULNERABLE GROUPS** and assess **LIVELIHOODS AT RISK**
- Promote **TREE PLANTING** activities involving households at the community level
- Enforce **ANTI-LITTER REGULATIONS**
- Strengthen policies to **DISCOURAGE USE OF FIRE**

- Establish skill centres on **ECOLOGICAL AGRICULTURE PRACTICES**
- Facilitate **MARKET OPPORTUNITIES** for farm produce
- Mobilise funds to **IMPROVE ACCESS TO HEALTH** services
- Provide **EARLY CHILDHOOD DEVELOPMENT (ECD) TRAINING CENTRES** and adult literacy classes
- Raise awareness on the importance of **LITERACY**

- Perform **MAPPING OF RISK AREAS**
- Construct **PROTECTIVE DYKES AND BUNDS**
- **RELOCATE SETTLEMENTS**
- Make provision of **AFFORDABLE HOUSING**
- Construct **PROPER DRAINAGE SYSTEMS**

- Raise awareness and promote **PROPER PUBLIC RESOURCE MANAGEMENT**
- Strengthen **HUMAN CAPACITY OF THE LOCAL AUTHORITIES**
- Strengthen the **PUBLIC ACCOUNTS COMMITTEE / PUBLIC ENTERPRISE COMMITTEE** (PAC/PEC) to ensure a proper public accounting system

Key

CHALLENGES

Through the data collection process and workshops held in Gambia, participants in the Greater Banjul Area and North Bank Region shared their perceptions on the key challenges they face:

- There are a number of urgent priorities for building DRR capacity in Gambia that should be fast-tracked, notably in relation to the development of storm water management in the Greater Banjul Area, and the development of integrated land use plans for wetland ecosystems. Floods and storm water runoff are most common in urban areas and increase exposure to malaria and other waterborne and water contact diseases. Inadequate storm water management systems and the lack of adherence to land use zoning regulations have increased the frequency and severity of flooding in this RTU. Thus, priority should be given to rehabilitating and upgrading the drainage systems.
- Disaster risk screening should be built into future development and planning at all sectors and regional levels in Gambia. Thus, to help mitigate impacts of coastal erosion and sea level rise, national efforts should be given to develop a strategic plan focused on protecting vulnerable areas along the beach, a legal framework to protect the remaining mangroves and other critical coastal habitats, and a program of action to protect urban infrastructure and populated areas.
- In the North Bank Region where crop and livestock production is totally dependent on the availability of rain, drought hazards are negatively impacting any gains obtained by crop diversification practices and other improved agricultural technologies. DRR strategies should focus on reducing the dependency on rainfall through irrigation activities and protecting ecosystems at risk from other natural or anthropogenic hazards that accompany droughts, such as wildfires, saltwater intrusion, and land use practices.
- There are specific DRR activities that are currently in place in the North Bank Region, but improvement is needed. These include controlling the use of fire and preserving the remaining woodlands from conversion to croplands or over-exploitation; promoting reforestation efforts as a way to regain lost cover; investing in research and development to broaden livestock- based livelihoods, such as salt-tolerant varieties of crops to help maintain productivity as salinity increases. Other relevant strategies on DRR and CCA that should be considered are the introduction of early maturing crop varieties to address drought-related problems; the promotion of irrigation for horticultural crop production, especially upland crop and other short cycles of crops such as peanuts; and the introduction of aquaculture for the supply of required protein.

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