



Photo Credit: FAO.org

NDPBA

SIERRA LEONE DISTRICT RISK PROFILES

**SUBNATIONAL ASSESSMENT
RESULTS**





SIERRA LEONE

BO

NDPBA DISTRICT PROFILE

SIERRA LEONE

BO

CAPITAL: BO

Area: 6,944 km²

Bo District is in the Southern Province in Sierra Leone, and borders with Kenema district to the east, Tonkolili district to the north, Moyamba district to the west, Bonthe district to the southwest and Pujehun district to the south. It is around 180km directly southeast of Freetown and around 100km directly south of Makeni city. Bo has been built amongst natural low-lying, low-relief topography, which in combination with the tropical monsoonal climate of the country, forms natural swampland. The major ethnic group is the Mende ethnic group. The economy of Bo District is mainly agricultural with mining of precious minerals such as diamonds and gold bauxite and rutile occurring in most chiefdoms in the District. The low-lying wetlands do provide conditions suitable for wetland crops including rice.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - Very Low

Score: 0.317 • Rank: 14/14



RESILIENCE (R) - High

Score: 0.604 • Rank: 4/14



MULTI-HAZARD EXPOSURE (MHE) - Very Low

Score: 0.158 • Rank: 12/14



VULNERABILITY (V) - Low

Score: 0.442 • Rank: 11/14



COPING CAPACITY (CC) - High

Score: 0.393 • Rank: 9/14



Population (2015)

575,478



Infant Mortality Rate

30



Illiterate population

48.8%



Access to improved water

71.3%



Average life expectancy

49.4 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>





MULTI-HAZARD EXPOSURE (MHE)


RANK: 12 / 14 DISTRICTS
SCORE: 0.158





ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:

 Inland Flood
7.6%
👤 49,195

 Coastal Flood
0.0%
👤 0

 Landslide
17.6%
👤 114,512

 Drought
0.0%
👤 0

 Wildfire
8.9%
👤 57,651



VULNERABILITY (V)

RANK: 11 / 14 DISTRICTS ASSESSED
SCORE: 0.442

Vulnerability in Bo is primarily driven by Economic Constraints and Gender Inequality. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 9/14 Districts Assessed

1.9% Average Annual Forest Loss	26.85 Livestock Density (per sq km)	22.9% Erosion Potential	0.03 Ecological Change	21.5% Area Affected by Mining
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Vulnerable Health Status

Rank: 11/14 Districts Assessed

49.4 Life Expectancy (years)	30 Infant Mortality Rate (per 1,000 live births)	243 Maternal Mortality Ratio	6.5% Acute Malnutrition (Children <5)	3.3% Population with Disability	295.4 Tuberculosis Incidence (per 100,000 persons)	39.7% Malaria Prevalance (per 100,000 persons)	1.4% HIV Prevalance (per 100,000 persons)
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Clean Water Vulnerability

Rank: 13/14 Districts Assessed

71.3% Households with Improved Water Source	49.7% Households with Improved Sanitation	65.6% Population at High Risk of Fecal Contamination	6.9% Water Source > 30 minutes from Home
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Information Access Vulnerability

Rank: 12/14 Districts Assessed

48.8% Illiteracy Rate (Age 10+)	86.8% Primary School Attendance Ratio	20.1% Upper Secondary Completion Rate	8.8% Households with Internet	14.5% Households with Television	54.8% Households with Internet
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Economic Constraints

Rank: 8/14 Districts Assessed

82.52 Economic Dependency Ratio	3.9% Population in Poorest Wealth Quintile	0.31 Income Inequality (GINI)	14.9% Child Labor Participation (Age 10-14)
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Gender Inequality

Rank: 3/14 Districts Assessed

1.61 Female to Male Land Ownership*	1.37 Female to Male Home Ownership*	0.86 Female to Male Labor Participation*	0.82 Female to Male Secondary Education*	14.3% Female Seats in Local Council
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*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 13/14 Districts Assessed

2.0% Average Annual Population Change	0.0% Average Annual Urban Population Change	24.61 Net Migration Rate	46.4% Population that is Food Insecure	33.1% Ratio of Youth (15-24) to Adult (15+)
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COPING CAPACITY (CC)

RANK: 9 / 14 DISTRICTS ASSESSED
SCORE: 0.393

Bo exhibits weaker Coping Capacity in the areas of Communications Capacity and Energy Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity

Rank: 1/14 Districts Assessed

18.8% Households with Bank Account	96.7% Income per Capita	19.9% Population in Highest Wealth Quintile	6.02 Financial Institutions per 100k Persons
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Governance

Rank: 6/14 Districts Assessed

1.74 Conflict Events per 100k Persons	86.9% Voter Participation
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Environmental Capacity

Rank: 11/14 Districts Assessed

1.2% Protected Area



Infrastructure Capacity

Rank: 3/14 Districts Assessed



Health Care Capacity

Rank: 2/14 Districts Assessed

17 Hospital Beds per 10,000 People	0.42 Physicians per 10,000 People	6.95 Nurses per 10,000 People	12.38 Average Distance to Nearest Hospital (km ²)	84.4% Vaccination Coverage
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Transportation Capacity

Rank: 6/14 Districts Assessed

0.74 Road Density (km per sq. km)	19.53 Distance to Airport or Seaport (km)
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Communications Capacity

Rank: 3/14 Districts Assessed

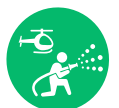
64.9% Households with Mobile Phone	12.83 Cellular Towers per 100k Persons
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Energy Capacity

Rank: 3/14 Districts Assessed

18.8% Households Connected to Electric Grid	0.87 Fuel Stations per 100k Persons
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Emergency Service Capacity

Rank: 3/14 Districts Assessed

3.3 Firefighters per 100k Persons	0.7 Search and Rescue Teams per 100k Persons	0.17 Fire Vehicles per 100k Persons
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RESILIENCE (R)

RANK: 4 / 14 DISTRICTS

SCORE: 0.604

Bo's score and ranking are due to Low Vulnerability combined with High Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Economic Constraints



Gender Inequality



Communications Capacity



Energy Capacity



HAZARD-SPECIFIC RISK



Coastal Flood

SCORE: 0.00/14

RANK: 8



Inland Flood

SCORE: 0.17

RANK: 5



Drought

SCORE: 0.00/14

RANK: 7



Landslide

SCORE: 0.08/14

RANK: 12



Wildfire

SCORE: 0.07/14

RANK: 12



MULTI-HAZARD RISK (MHR)

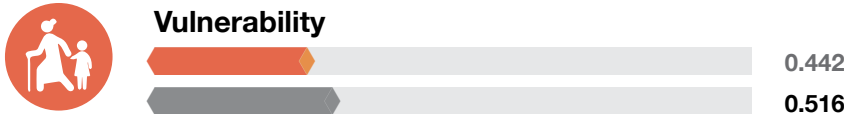
14 / 14

Rank within districts
Score: 0.317



Bo's score and ranking are due to Very Low Multi-hazard exposure combined with Low Vulnerability and High Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



District score
Country score

BO RECOMMENDATIONS

1

Economic Constraints

Economic constraints have individual, household, community, and district-wide influence. Limitations on available financial resources reduce opportunities to invest in mitigation and preparedness measures and limit Bo District's ability to facilitate short- and long-term recovery.

Reduce income inequality by encouraging programs that support small business opportunities to diversify livelihoods (beyond agriculture and extractive industry) and generate prospects for equitable distribution of property and economic assets in the district.

Reduce the burden of a high economic dependency ratio through social benefit programs that help support the elderly and families with children.

2

Gender Inequality

Marginalized populations are less likely to have their needs met under pre-disaster conditions, and therefore become even more susceptible to harm during times of disaster. Increase gender-based inclusion in all phases of DM, ensuring the implementation at the district and local levels. Course of action must recognize the role of women in society and support changes to policies and programs to promote gender-equal access.

Focus efforts to support equal labor participation by diversifying economic opportunities for women in the district.

Encourage women to participate in the planning and decision-making process through inclusion in the district disaster management committee and representation in local council.

BO RECOMMENDATIONS

1

Communications Capacity

The density, diversity, resilience, and quality of communications infrastructure influence how district- and local-level populations are able to facilitate effective and coordinated communication.

While Bo District ranks 3rd in overall Communications Capacity, findings indicate that just 65% of households have access to mobile phones. Pursue public-private partnerships to increase availability of affordable mobile communications and accessible and sustainable power supply.

2

Energy Capacity

Homes, businesses, industry, and government all rely on access to energy resources for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability and quantity of energy reserves in Bo will contribute to economic development and increase the speed of recovery processes in the aftermath of a disaster.

Focus development programs on increasing energy capacity by establishing sustainable power generation within the district and extending the existing transmission and distribution network.

Incentivize construction of petrol/gas stations and fuel storage infrastructure to increase fuel capacity and availability.

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Suite 2, Kihei, HI 9675 3**

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www.pdc.prg



ndpba.sle@pdc.org



SIERRA LEONE

BOMBALI

NDPBA DISTRICT PROFILE

SIERRA LEONE

BOMBALI

CAPITAL: MAKENI

Area: 7,985 km²

Bombali District is located in the Northern Province of Sierra Leone. It is bounded to the north by the Republic of Guinea, to the northeast is Kambia District, and Port Loko, Tonkolili and Koinadugu Districts to the southeast and east, respectively. The capital and largest city is Makeni, which is the largest city in the north. Topographically, Makeni city has been built on low-relief flat lying ground and is also surrounded by flat ground, with the exception of the Wusum and Mena Hills. These hills reach around 100m above the surrounding plains. The main economic activities include small-scale gold mining, agricultural food crop production and rearing of small ruminants and cattle. Whilst gold mining is not widespread, northern Bombali District can be considered to have first rate dairy farming potentials.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - Moderate

Score: 0.460 • Rank: 8/14



RESILIENCE (R) - High

Score: 0.565 • Rank: 5/14



MULTI-HAZARD EXPOSURE (MHE) - High

Score: 0.510 • Rank: 5/14



VULNERABILITY (V) - Low

Score: 0.491 • Rank: 10/14



COPING CAPACITY (CC) - High

Score: 0.666 • Rank: 3/14



Population (2015)

606,544



Infant Mortality Rate

68



Illiterate population

53.9%



Access to improved water

70.2%



Average life expectancy

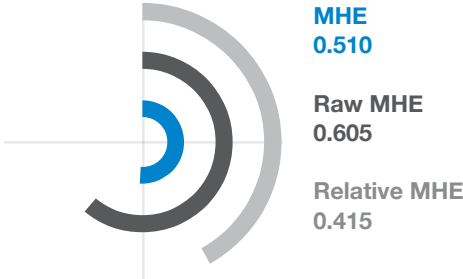
55.6 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>




MULTI-HAZARD EXPOSURE (MHE)


RANK: 5 / 14 DISTRICTS
SCORE: 0.510




ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:




Inland Flood
5.2%
👤 24,906




Coastal Flood
0.0%
👤 0



Landslide
47.4%
👤 227,847



Drought
1.8%
👤 8,486



Wildfire
53.8%
👤 259,012



VULNERABILITY (V)

RANK: 10 / 14 DISTRICTS ASSESSED
SCORE: 0.491

Vulnerability in Bombali is primarily driven by Economic Constraints and Population Pressures. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 8/14 Districts Assessed

1.3%	53.6	48.7%	-0.01	5.5%
Average Annual Forest Loss	Livestock Density (per sq km)	Erosion Potential	Ecological Change	Area Affected by Mining



Vulnerable Health Status

Rank: 10/14 Districts Assessed

55.6	68	372	3.3%	4.2%	156.3	37.6%	1.2%
Life Expectancy (years)	Infant Mortality Rate (per 1,000 live births)	Maternal Mortality Ratio	Acute Malnutrition (Children <5)	Population with Disability	Tuberculosis Incidence (per 100,000 persons)	Malaria Prevalance (per 100,000 persons)	HIV Prevalance (per 100,000 persons)



Clean Water Vulnerability

Rank: 10/14 Districts Assessed

70.2%	44.8%	84.1%	4.9%
Households with Improved Water Source	Households with Improved Sanitation	Population at High Risk of Fecal Contamination	Water Source > 30 minutes from Home



Information Access Vulnerability

Rank: 10/14 Districts Assessed

53.9%	86.4%	21.8%	9.1%	16.8%	48.4%
Illiteracy Rate (Age 10+)	Primary School Attendance Ratio	Upper Secondary Completion Rate	Households with Internet	Households with Television	Households with Internet



Economic Constraints

Rank: 6/14 Districts Assessed

84.41	0.7%	0.31	15.8%
Economic Dependency Ratio	Population in Poorest Wealth Quintile	Income Inequality (GINI)	Child Labor Participation (Age 10-14)



Gender Inequality

Rank: 12/14 Districts Assessed

1.38	1.1	0.97	0.69	17.5%
Female to Male Land Ownership*	Female to Male Home Ownership*	Female to Male Labor Participation*	Female to Male Secondary Education*	Female Seats in Local Council

*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 6/14 Districts Assessed

3.6%	4.2%	41.77	46.6%	34.8%
Average Annual Population Change	Average Annual Urban Population Change	Net Migration Rate	Population that is Food Insecure	Ratio of Youth (15-24) to Adult (15+)



COPING CAPACITY (CC)

RANK: 3 / 14 DISTRICTS ASSESSED
SCORE: 0.666

Bombali exhibits weaker Coping Capacity in the areas of Transportation Capacity and Communications Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity



Rank: 4/14 Districts Assessed

13.1%

Households with Bank Account

96.3%

Income per Capita

22.0%

Population in Highest Wealth Quintile

2.9

Financial Institutions per 100k Persons



Governance



Rank: 5/14 Districts Assessed

1.48

Conflict Events per 100k Persons

84.6%

Voter Participation



Environmental Capacity



Rank: 2/14 Districts Assessed

16.1%

Protected Area



Infrastructure Capacity



Rank: 6/14 Districts Assessed



Health Care Capacity Rank: 3/14 Districts Assessed

16

Hopital Beds per 10,000 People

0.43

Physicians per 10,000 People

4.84

Nurses per 10,000 People

10.83

Average Distance to Nearest Hospital (km²)

79.3%

Vaccination Coverage



Transportation Capacity Rank: 12/14 Districts Assessed

0.95

Road Density (km per sq. km)

92.42

Distance to Airport or Seaport (km)



Communications Capacity Rank: 9/14 Districts Assessed

65.7%

Households with Mobile Phone

7.47

Cellular Towers per 100k Persons



Energy Capacity Rank: 2/14 Districts Assessed

27.8%

Households Connected to Electric Grid

0.73

Fuel Stations per 100k Persons



Emergency Service Capacity



Rank: 6/14 Districts Assessed

2.14

Firefighters per 100k Persons

0.33

Search and Rescue Teams per 100k Persons

0.16

Fire Vehicles per 100k Persons



RESILIENCE (R)

RANK: 5 / 14 DISTRICTS
SCORE: 0.565

Bombali's score and ranking are due to Low Vulnerability combined with High Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Economic Constraints



Population Pressures



Transportation Capacity



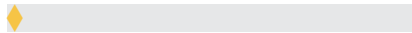
Communications Capacity



HAZARD-SPECIFIC RISK



Coastal Flood



SCORE: 0.00/14
RANK: 8



Inland Flood



SCORE: 0.11
RANK: 10



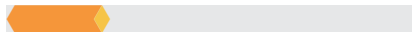
Drought



SCORE: 0.20/14
RANK: 6



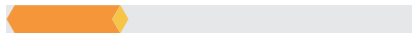
Landslide



SCORE: 0.25/14
RANK: 6



Wildfire



SCORE: 0.31/14
RANK: 4



MULTI-HAZARD RISK (MHR)

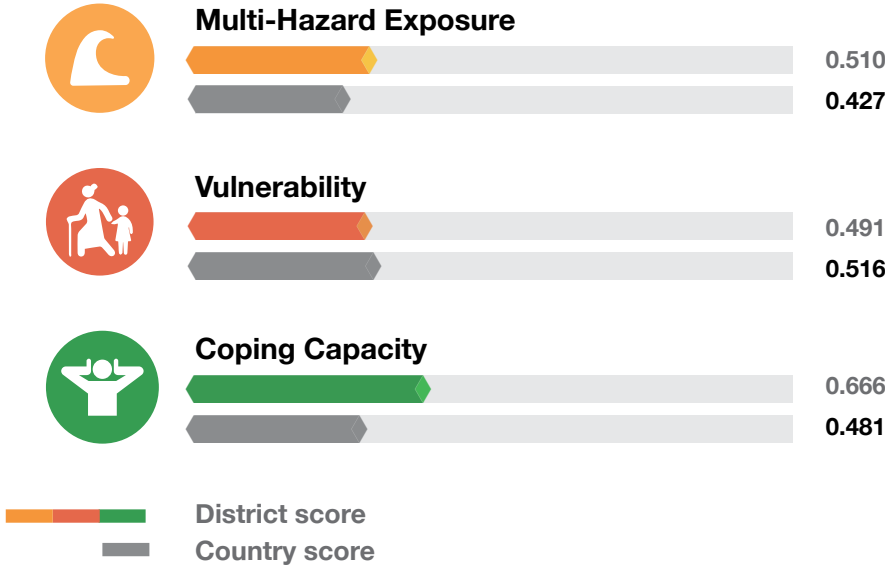
8 / 14

Rank within districts
Score: 0.460



Bombali's score and ranking are due to High Multi-hazard exposure combined with Low Vulnerability and High Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



BOMBALI RECOMMENDATIONS

1

Economic Constraints

Economic constraints have individual, household, community, and district-wide influence. Limitations on available financial resources reduce opportunities to invest in mitigation and preparedness measures and limit Bombali District's ability to facilitate short- and long-term recovery.

Focus development programs on alleviating poverty by attracting alternative industry and small business ventures to the district.

Given that migration that has led to increased population in the district, focus social programs and economic stimuli to create sustainable business opportunities for the migrant population.

2

Population Pressures

Rapid changes in population size and distribution can alter population vulnerability characteristics presenting planning challenges and destabilizing social, economic, and environmental systems. Increased population pressures require disaster managers to realign needs, institutional structures, and available resources to support delivery of basic resources before, during, and after an event.

Given the economic constraints observed in Bombali, monitor changes in population to anticipate increased pressures on the district's economy and infrastructure. Reallocate resources to ensure stability and sustainability of the food system meet the needs of a growing population.

Bombali district is highly exposed to wildfires and landslides. Establish multi-hazard plans at the district level to support preparedness and response planning and perform regular updates to plans and SOPs to account for increases in population.

BOMBALI RECOMMENDATIONS

1

Transportation Capacity

Denser and more diverse transportation networks provide more options for bringing outside resources into an impacted area and increase the ability of response stakeholders to access district populations. Improved transportation capacity supports all aspects of Bombali District ability to distribute resources before, during, and after a disaster.

Increase accessibility, mobility and external resource connectivity to the district by constructing an airfield.

2

Communications Capacity

The density, diversity, resilience, and quality of communications infrastructure influence how district- and local-level populations are able to facilitate effective and coordinated communication.

Pursue public-private partnerships to increase availability of affordable mobile communications and an accessible and sustainable power supply.

Incentivize expansion of the existing cellular network by increasing the consumer base for mobile communications.

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SIERRA LEONE

BONTHE

NDPBA DISTRICT PROFILE

SIERRA LEONE

BONTHE

CAPITAL: BONTHE

Area: 3,468 km²

Bonthe District is the southernmost district in Sierra Leone. It is bounded on the south and west by the Atlantic Ocean, to the northwest is Moyamba District, on the north is Bo District, and east is Pujehun District. The landmass consists of the mainland separated from Bonthe and York Islands by the Sherbro Rivers, a lagoon formed by the coalescence of the mouths of the Moa, Sewa and Jong rivers. Bonthe district is the least populous in Sierra Leone and is primarily inhabited by the Sherbro people - who are the native people of the district; and the Mende people, who immigrated to the district from Mende-dominant areas in the southern part of Sierra Leone. Bonthe District has one of the world's largest deposits of titanium ore in the world. Rutile and bauxite are also mined within the district. Ilmenite and zircon naturally occur with these two minerals. The district has fertile soils, well-drained land and a temperate climate. Food crops include rice, grown in the 'bolilands', potatoes and yams. Oil palm, coconut and cassava plantations produce cash crops. Fishing in the riverine and coastal areas is a vibrant activity. The island also has many historical sites dating to the Atlantic Slave trade era, game reserves at Bohol, surfing on the Sherbro Rivers and some of the best beaches in the country on Bonthe and York Islands and Turner's Peninsula.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - Low

Score: 0.412 • Rank: 11/14



RESILIENCE (R) - Low

Score: 0.408 • Rank: 9/14



MULTI-HAZARD EXPOSURE (MHE) - Very Low

Score: 0.053 • Rank: 14/14



VULNERABILITY (V) - High

Score: 0.559 • Rank: 5/14



COPING CAPACITY (CC) - Low

Score: 0.391 • Rank: 10/14



Population (2015)

200,781



Infant Mortality Rate

55



Illiterate population

58.9%



Access to improved water

44.8%



Average life expectancy

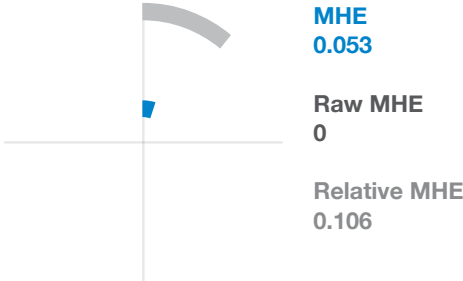
54.4 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>





MULTI-HAZARD EXPOSURE (MHE)


RANK: 14 / 14 DISTRICTS
SCORE: 0.053




ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:

 Inland Flood
8.2%
👤 13,487

 Coastal Flood
11.2%
👤 18,446

 Landslide
21.6%
👤 35,498

 Drought
0.0%
👤 0

 Wildfire
11.9%
👤 19,570



VULNERABILITY (V)

RANK: 5 / 14 DISTRICTS ASSESSED
SCORE: 0.559

Vulnerability in Bonthe is primarily driven by Information Access Vulnerability and Economic Constraints. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 13/14 Districts Assessed

1.1% Average Annual Forest Loss	112.39 Livestock Density (per sq km)	15.5% Erosion Potential	0.24 Ecological Change	51.7% Area Affected by Mining
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Vulnerable Health Status

Rank: 7/14 Districts Assessed

54.4 Life Expectancy (years)	55 Infant Mortality Rate (per 1,000 live births)	531 Maternal Mortality Ratio	6.5% Acute Malnutrition (Children <5)	2.2% Population with Disability	236.5 Tuberculosis Incidence (per 100,000 persons)	26.1% Malaria Prevalance (per 100,000 persons)	0.9% HIV Prevalance (per 100,000 persons)
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Clean Water Vulnerability

Rank: 9/14 Districts Assessed

44.8% Households with Improved Water Source	32.5% Households with Improved Sanitation	67.8% Population at High Risk of Fecal Contamination	3.2% Water Source > 30 minutes from Home
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Information Access Vulnerability

Rank: 3/14 Districts Assessed

58.9% Illiteracy Rate (Age 10+)	58.0% Primary School Attendance Ratio	13.0% Upper Secondary Completion Rate	4.0% Households with Internet	3.0% Households with Television	54.6% Households with Internet
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Economic Constraints

Rank: 2/14 Districts Assessed

82.62 Economic Dependency Ratio	7.9% Population in Poorest Wealth Quintile	0.32 Income Inequality (GINI)	23.4% Child Labor Participation (Age 10-14)
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Gender Inequality

Rank: 9/14 Districts Assessed

1.1 Female to Male Land Ownership*	1.28 Female to Male Home Ownership*	0.84 Female to Male Labor Participation*	0.99 Female to Male Secondary Education*	17.2% Female Seats in Local Council
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*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 3/14 Districts Assessed

3.3% Average Annual Population Change	6.1% Average Annual Urban Population Change	35.04 Net Migration Rate	58.6% Population that is Food Insecure	35.7% Ratio of Youth (15-24) to Adult (15+)
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COPING CAPACITY (CC)

RANK: 10 / 14 DISTRICTS ASSESSED
SCORE: 0.391

Bonthe exhibits weaker Coping Capacity in the areas of Emergency Service Capacity and Energy Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity



Rank: 7/14 Districts Assessed

10.4%

Households with Bank Account

97.0%

Income per Capita

4.0%

Population in Highest Wealth Quintile

3.85

Financial Institutions per 100k Persons



Governance



Rank: 10/14 Districts Assessed

2.49

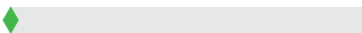
Conflict Events per 100k Persons

87.4%

Voter Participation



Environmental Capacity



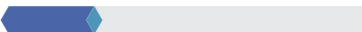
Rank: 14/14 Districts Assessed

0.0%

Protected Area



Infrastructure Capacity



Rank: 10/14 Districts Assessed



Health Care Capacity Rank: 8/14 Districts Assessed

13

Hospital Beds per 10,000 People

0.3

Physicians per 10,000 People

4.64

Nurses per 10,000 People

14.15

Average Distance to Nearest Hospital (km²)

68.9%

Vaccination Coverage



Transportation Capacity Rank: 11/14 Districts Assessed

0.35

Road Density (km per sq. km)

29.8

Distance to Airport or Seaport (km)



Communications Capacity Rank: 5/14 Districts Assessed

68.9%

Households with Mobile Phone

9.86

Cellular Towers per 100k Persons



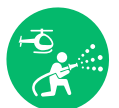
Energy Capacity Rank: 13/14 Districts Assessed

0.9%

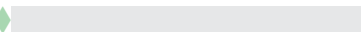
Households Connected to Electric Grid

0

Fuel Stations per 100k Persons



Emergency Service Capacity



Rank: 10/14 Districts Assessed

0

Firefighters per 100k Persons

0

Search and Rescue Teams per 100k Persons

0

Fire Vehicles per 100k Persons



RESILIENCE (R)

RANK: 9 / 14 DISTRICTS

SCORE: 0.408

Bonthe's score and ranking are due to High Vulnerability combined with Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Information
Access
Vulnerability



Economic
Constraints



Emergency Service
Capacity



Energy Capacity



HAZARD-SPECIFIC RISK



Coastal Flood

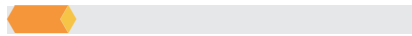


SCORE: 0.56/14

RANK: 1



Inland Flood



SCORE: 0.15

RANK: 7



Drought

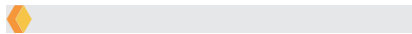


SCORE: 0.00/14

RANK: 7



Landslide

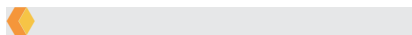


SCORE: 0.03/14

RANK: 14



Wildfire



SCORE: 0.03/14

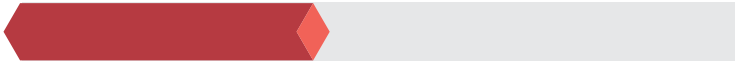
RANK: 13



MULTI-HAZARD RISK (MHR)

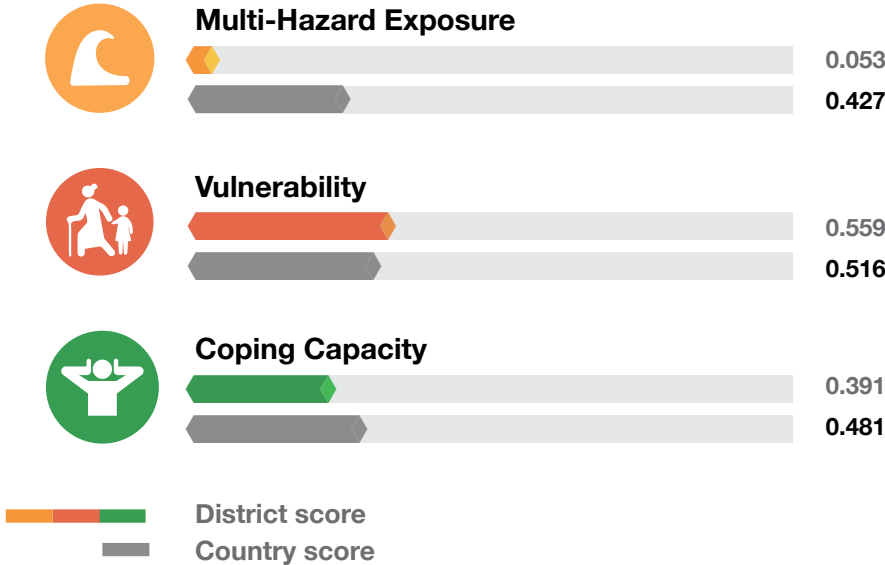
11 / 14

Rank within districts
Score: 0.412



Bonthe's score and ranking are due to Very Low Multi-hazard exposure combined with High Vulnerability and Low Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



BONTHE RECOMMENDATIONS

1

Information Access Vulnerability

Limitations in information access can impede a population's ability to receive, understand, and take action. Emergency messages must take into account the unique information access constraints of the district. Emergency messages presented to the population of Bonthe District must contain clear and simple information to ensure an appropriate response to save lives and reduce losses.

Findings show that Bonthe district has the lowest primary school attendance rate in Sierra Leone, coupled with high illiteracy. Focus on reducing economic barriers to school attendance, promoting stable household living conditions, and reducing child labor.

Ensure equitable access to schools and incentivize expansion of human resources to underserved villages.

Less than 5% of households have access to television or internet in Bonthe, while nearly 55% have a radio. While investing to diversify access to communication technology (internet, television), officials should broadcast critical information and disaster warnings primarily via radio to keep the population informed and ensure that appropriate actions are taken. Bonthe district is exposed to inland and coastal flooding, landslides, and wildfire hazards.

2

Economic Constraints

Economic constraints have individual, household, community, and district-wide influence. Limitations on available financial resources reduce opportunities to invest in mitigation and preparedness measures and limit Bonthe's ability to facilitate short- and long-term recovery.

Findings show that Bonthe has the highest economic inequality in Sierra Leone, coupled with nearly 40% of the population in the nation's poorest wealth quintile. Moreover, the child labor rate is observed at nearly 25%. Economic constraints in Bonthe are closely linked to Information Access Vulnerability and vice versa. Removing economic barriers to education, and ensuring equitable access to schools, educational resources, and information technology will reduce vulnerability in the district.

BONTHE RECOMMENDATIONS

1

Emergency Service Capacity

Societies establish capacities to manage emergencies that scale from day-to-day events up to catastrophes that impact all of society. Establishing and maintaining a broad range of systems and resources to support emergency services in Bonthe will increase the capacity for disaster management and response.

Focus on building community and volunteer fire and emergency response corps. Identify government or external resources to conduct emergency services training and conduct district-level exercise on a regular basis.

Connect vulnerable and exposed communities to training through the Sierra Leone Red Cross Community Disaster Preparedness project. In conjunction with Red Cross efforts, develop locally-managed community emergency response teams (CERT).

2

Energy Capacity

Homes, businesses, industry, and government all rely on access to energy resources for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability and quantity of energy reserves in Bonthe will contribute to economic development and increase the speed of recovery processes in the aftermath of a disaster.

Incentivize construction of gas stations and fuel storage infrastructure to fuel capacity and availability.

Focus development programs on increasing energy capacity by establishing sustainable power generation within the district and extending the existing transmission and distribution network.

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SIERRA LEONE

KAILAHUN

NDPBA DISTRICT PROFILE

SIERRA LEONE KAILAHUN

CAPITAL: KAILAHUN

Area: 3,859 km²

Kailahun District is a district in the Eastern Province of Sierra Leone. Its capital and largest city is Kailahun town. Kailahun district has fourteen chiefdoms. The border of the district with Guinea is formed by a section of the Moa River. The population in the district is predominantly Muslim. Kailahun has a mixed economy with small-scale mining and agricultural production of coffee, cacao and rice. Shifting cultivation and crop rotation is the main farming practice and there is an extensive swamp cultivation in the district. The main cash crops are cocoa and coffee, but kola nuts, cashew nuts, pineapples, Avogadro pear, millet, plantains and bananas, sorghum and maize are also important. Only two minerals are mined and on a small-scale basis – gold in Yawei and Penguia Chiefdoms and diamonds in Malema and Jawi Chiefdoms.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - High

Score: 0.586 • Rank: 3/14



RESILIENCE (R) - Moderate

Score: 0.429 • Rank: 8/14



MULTI-HAZARD EXPOSURE (MHE) - High

Score: 0.619 • Rank: 4/14



VULNERABILITY (V) - Moderate

Score: 0.534 • Rank: 8/14



COPING CAPACITY (CC) - Low

Score: 0.622 • Rank: 5/14



Population (2015)

526,379



Infant Mortality Rate

64



Illiterate population

52.8%



Access to improved water

67.1%



Average life expectancy

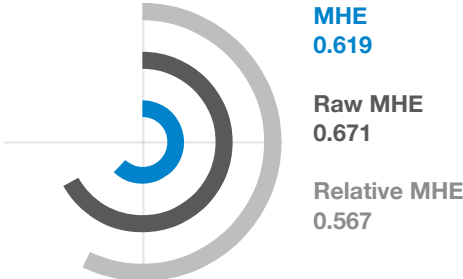
37.9 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>




MULTI-HAZARD EXPOSURE (MHE)


RANK: 4 / 14 DISTRICTS
SCORE: 0.619




ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:

 Inland Flood
5.0%
👤 23,447

 Coastal Flood
0.0%
👤 0

 Landslide
16.8%
👤 78,490

 Drought
93.5%
👤 436,840

 Wildfire
20.0%
👤 93,256



VULNERABILITY (V)

RANK: 8 / 14 DISTRICTS ASSESSED
SCORE: 0.534

Vulnerability in Kailahun is primarily driven by Information Access Vulnerability and Clean Water Access Vulnerability. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 12/14 Districts Assessed

1.7%	20.6	4.5%	0.04	0.0%
Average Annual Forest Loss	Livestock Density (per sq km)	Erosion Potential	Ecological Change	Area Affected by Mining



Vulnerable Health Status

Rank: 3/14 Districts Assessed

37.9	64	229	3.8%	5.6%	77	45.0%	0.9%
Life Expectancy (years)	Infant Mortality Rate (per 1,000 live births)	Maternal Mortality Ratio	Acute Malnutrition (Children <5)	Population with Disability	Tuberculosis Incidence (per 100,000 persons)	Malaria Prevalance (per 100,000 persons)	HIV Prevalance (per 100,000 persons)



Clean Water Vulnerability

Rank: 7/14 Districts Assessed

67.1%	42.5%	84.8%	15.3%
Households with Improved Water Source	Households with Improved Sanitation	Population at High Risk of Fecal Contamination	Water Source > 30 minutes from Home



Information Access Vulnerability

Rank: 6/14 Districts Assessed

52.8%	79.7%	7.6%	6.9%	0.4%	47.4%
Illiteracy Rate (Age 10+)	Primary School Attendance Ratio	Upper Secondary Completion Rate	Households with Internet	Households with Television	Households with Internet



Economic Constraints

Rank: 12/14 Districts Assessed

79.59	17.1%	0.21	18.1%
Economic Dependency Ratio	Population in Poorest Wealth Quintile	Income Inequality (GINI)	Child Labor Participation (Age 10-14)



Gender Inequality

Rank: 7/14 Districts Assessed

1.2	1.43	0.98	0.44	24.1%
Female to Male Land Ownership*	Female to Male Home Ownership*	Female to Male Labor Participation*	Female to Male Secondary Education*	Female Seats in Local Council

*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 7/14 Districts Assessed

3.5%	8.2%	1.62	50.5%	35.5%
Average Annual Population Change	Average Annual Urban Population Change	Net Migration Rate	Population that is Food Insecure	Ratio of Youth (15-24) to Adult (15+)



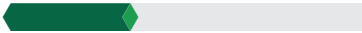
COPING CAPACITY (CC)

RANK: 5 / 14 DISTRICTS ASSESSED
SCORE: 0.622

Kailahun exhibits weaker Coping Capacity in the areas of Emergency Service Capacity and Energy Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity



Rank: 11/14 Districts Assessed

7.4%

Households with Bank Account

98.8%

Income per Capita

1.1%

Population in Highest Wealth Quintile

1.12

Financial Institutions per 100k Persons



Governance



Rank: 9/14 Districts Assessed

1.71

Conflict Events per 100k Persons

80.9%

Voter Participation



Environmental Capacity



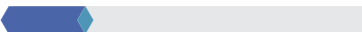
Rank: 5/14 Districts Assessed

6.6%

Protected Area



Infrastructure Capacity



Rank: 11/14 Districts Assessed



Health Care Capacity Rank: 5/14 Districts Assessed

11

Hopital Beds per 10,000 People

0.74

Physicians per 10,000 People

1.74

Nurses per 10,000 People

7.29

Average Distance to Nearest Hospital (km²)

80.0%

Vaccination Coverage



Transportation Capacity Rank: 8/14 Districts Assessed

0.81

Road Density (km per sq. km)

56.1

Distance to Airport or Seaport (km)



Communications Capacity Rank: 12/14 Districts Assessed

59.3%

Households with Mobile Phone

6.08

Cellular Towers per 100k Persons



Energy Capacity Rank: 12/14 Districts Assessed

0.2%

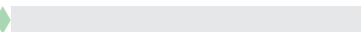
Households Connected to Electric Grid

0.16

Fuel Stations per 100k Persons



Emergency Service Capacity



Rank: 10/14 Districts Assessed

0

Firefighters per 100k Persons

0

Search and Rescue Teams per 100k Persons

0

Fire Vehicles per 100k Persons



RESILIENCE (R)

RANK: 8 / 14 DISTRICTS
SCORE: 0.429

Kailahun's score and ranking are due to Moderate Vulnerability combined with Low Coping Capacity scores.

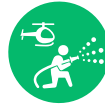
Below are the four thematic areas with the weakest relative scores:



**Information
Access
Vulnerability**



**Clean Water
Access
Vulnerability**



**Emergency Service
Capacity**



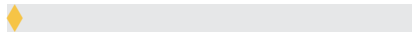
Energy Capacity



HAZARD-SPECIFIC RISK



Coastal Flood



SCORE: 0.00/14
RANK: 8



Inland Flood



SCORE: 0.14
RANK: 8



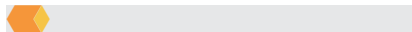
Drought



SCORE: 0.57/14
RANK: 3



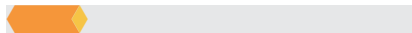
Landslide



SCORE: 0.08/14
RANK: 13



Wildfire



SCORE: 0.19/14
RANK: 7



MULTI-HAZARD RISK (MHR)

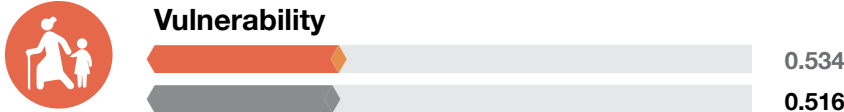
3 / 14

Rank within districts
Score: 0.586



Kailahun's score and ranking are due to High Multi-hazard exposure combined with Moderate Vulnerability and Low Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



District score
Country score

KAILAHUN RECOMMENDATIONS

1

Information Access Vulnerability

Limitations in information access can impede a population’s ability to receive, understand, and take action. Emergency messages must take into account the unique information access constraints of the district. Emergency messages presented to the population of Kailahun District must contain clear and simple information to ensure an appropriate response to save lives and reduce losses.

Focus interventions on building literacy standards at the primary level, and on reducing school dropout rates. Ensure that the district has the schools and human resources to support education through the secondary level.

Encourage whole-of-community education to ensure support for education outside of the classroom, including volunteerism, school-to-work programs, and community-based learning projects.

Invest in information technology (internet, television, radio) and associated sustainable energy programs to support multimodal communications and learning environments in the district. Ensuring access to information during normal operations increases the capacity receive, comprehend, and act on critical information and disaster warnings. Kailahun district is exposed to drought, wildfire, landslide, and inland flood hazards.

2

Clean Water Access Vulnerability

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation in Kailahun improves health outcomes and frees up resources to decrease further susceptibility to impacts.

Invest in water and sanitation infrastructure to increase access and reduce exposure to disease.

Findings show a high rate of exposure to drought in Kailahun. Invest in infrastructure to support water conservation and support farmers through training and education on drought resistant crop varieties and farming practices to reduce water stress and potential drought impacts.

KAILAHUN RECOMMENDATIONS

1

Emergency Service Capacity

Societies establish capacities to manage emergencies that scale from day-to-day events up to catastrophes that impact all of society. Establishing and maintaining a broad range of systems and resources to support emergency services in Kailahun will increase the capacity for disaster management and response.

Focus on building community and volunteer fire and emergency response corps. Identify government or external resources to conduct emergency services training and conduct district-level exercises on a regular basis.

Connect vulnerable and exposed communities to training through the Sierra Leone Red Cross Community Disaster Preparedness project. In conjunction with Red Cross efforts, develop locally-managed community emergency response teams (CERT).

2

Energy Capacity

Homes, businesses, industry, and government all rely on access to energy resources for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability and quantity of energy reserves in Kailahun will contribute to economic development and increase the speed of recovery processes in the aftermath of a disaster.

Focus development programs on increasing energy capacity by establishing sustainable power generation within the district and extending the existing transmission and distribution network.

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SIERRA LEONE

KAMBIA

NDPBA DISTRICT PROFILE

SIERRA LEONE KAMBIA

CAPITAL: KAMBIA

Area: 3,108 km²

Kambia District borders with the Republic of Guinea to the North, Port Loko district to the South and Bombali district to the East. It occupies a total area of 3,108 km² and is divided into seven chiefdoms. The topography of the district is mainly dominated by low-lying plains with vegetation and soils covered mainly by low shrubs and grassland. The drainage system of the Great and Little Scarcies Rivers lie within the district. Kambia is ethnically diverse, the largest and most prominent ethnic groups are Temne, Susu, Limba, Fula, and Mandingo. The district provides a vital trade route between Sierra Leone and the neighboring Republic of Guinea. Livelihood activities are mainly farming - rice and roots crops, cassava and yam, followed by cross-border trade with neighboring Guinea. In addition to farming, fishing along the many river estuaries and streams is practiced by a large proportion of the population.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - High

Score: 0.514 • Rank: 5/14



RESILIENCE (R) - Very Low

Score: 0.353 • Rank: 12/14



MULTI-HAZARD EXPOSURE (MHE) - Low

Score: 0.250 • Rank: 9/14



VULNERABILITY (V) - Moderate

Score: 0.538 • Rank: 7/14



COPING CAPACITY (CC) - Very Low

Score: 0.245 • Rank: 14/14



Population (2015)

345,474



Infant Mortality Rate

18



Illiterate population

60.7%



Access to improved water

41.5%



Average life expectancy

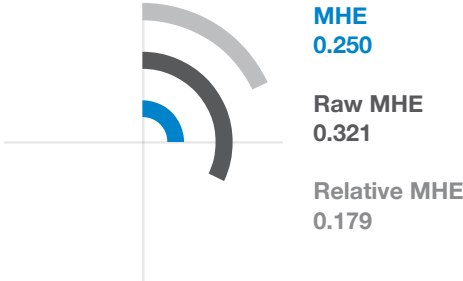
55.5 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>





MULTI-HAZARD EXPOSURE (MHE)


RANK: 9 / 14 DISTRICTS
SCORE: 0.250




ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:

 Inland Flood
8.1%
👤 27,565

 Coastal Flood
1.3%
👤 4,577

 Landslide
19.8%
👤 67,471

 Drought
0.0%
👤 0

 Wildfire
36.7%
👤 124,963



VULNERABILITY (V)

RANK: 7 / 14 DISTRICTS ASSESSED
SCORE: 0.538

Vulnerability in Kambia is primarily driven by Clean Water Access Vulnerability and Information Access Vulnerability. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 5/14 Districts Assessed

1.2% Average Annual Forest Loss	21.58 Livestock Density (per sq km)	34.4% Erosion Potential	0.03 Ecological Change	15.3% Area Affected by Mining
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Vulnerable Health Status

Rank: 14/14 Districts Assessed

55.5 Life Expectancy (years)	18 Infant Mortality Rate (per 1,000 live births)	322 Maternal Mortality Ratio	2.8% Acute Malnutrition (Children <5)	1.9% Population with Disability	145.7 Tuberculosis Incidence (per 100,000 persons)	48.3% Malaria Prevalance (per 100,000 persons)	0.9% HIV Prevalance (per 100,000 persons)
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Clean Water Vulnerability

Rank: 3/14 Districts Assessed

41.5% Households with Improved Water Source	21.6% Households with Improved Sanitation	90.5% Population at High Risk of Fecal Contamination	11.4% Water Source > 30 minutes from Home
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Information Access Vulnerability

Rank: 7/14 Districts Assessed

60.7% Illiteracy Rate (Age 10+)	78.7% Primary School Attendance Ratio	17.2% Upper Secondary Completion Rate	10.9% Households with Internet	1.4% Households with Television	50.8% Households with Internet
---	---	---	--	---	--



Economic Constraints

Rank: 7/14 Districts Assessed

86.89 Economic Dependency Ratio	8.4% Population in Poorest Wealth Quintile	0.24 Income Inequality (GINI)	21.6% Child Labor Participation (Age 10-14)
---	--	---	---



Gender Inequality

Rank: 8/14 Districts Assessed

0.61 Female to Male Land Ownership*	0.71 Female to Male Home Ownership*	1 Female to Male Labor Participation*	0.61 Female to Male Secondary Education*	13.0% Female Seats in Local Council
---	---	---	--	---

*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 9/14 Districts Assessed

2.2% Average Annual Population Change	11.4% Average Annual Urban Population Change	9.17 Net Migration Rate	42.6% Population that is Food Insecure	35.1% Ratio of Youth (15-24) to Adult (15+)
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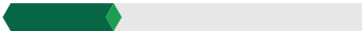
COPING CAPACITY (CC)

RANK: 14 / 14 DISTRICTS ASSESSED
SCORE: 0.245

Kambia exhibits weaker Coping Capacity in the areas of Governance and Energy Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity



Rank: 12/14 Districts Assessed

4.6%

Households with Bank Account

98.7%

Income per Capita

2.0%

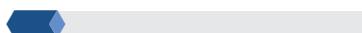
Population in Highest Wealth Quintile

1.04

Financial Institutions per 100k Persons



Governance



Rank: 13/14 Districts Assessed

2.03

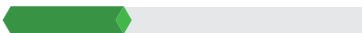
Conflict Events per 100k Persons

65.7%

Voter Participation



Environmental Capacity



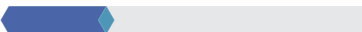
Rank: 10/14 Districts Assessed

2.1%

Protected Area



Infrastructure Capacity



Rank: 8/14 Districts Assessed



Health Care Capacity

Rank: 11/14 Districts Assessed

9

Hopital Beds per 10,000 People

0.11

Physicians per 10,000 People

2.01

Nurses per 10,000 People

12.15

Average Distance to Nearest Hospital (km²)

51.6%

Vaccination Coverage



Transportation Capacity

Rank: 7/14 Districts Assessed

1.20

Road Density (km per sq. km)

59.97

Distance to Airport or Seaport (km)



Communications Capacity

Rank: 10/14 Districts Assessed

71.2%

Households with Mobile Phone

5.57

Cellular Towers per 100k Persons



Energy Capacity

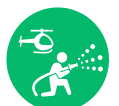
Rank: 8/14 Districts Assessed

0.1%

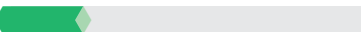
Households Connected to Electric Grid

0.51

Fuel Stations per 100k Persons



Emergency Service Capacity



Rank: 8/14 Districts Assessed

1.74

Firefighters per 100k Persons

0.29

Search and Rescue Teams per 100k Persons

0

Fire Vehicles per 100k Persons



RESILIENCE (R)

RANK: 12 / 14 DISTRICTS
SCORE: 0.353

Kambia's score and ranking are due to Moderate Vulnerability combined with Very Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Clean Water
Access
Vulnerability**



**Information
Access
Vulnerability**



Governance



Energy Capacity



HAZARD-SPECIFIC RISK



Coastal Flood

SCORE: 0.40/14
RANK: 2



Inland Flood

SCORE: 0.24
RANK: 4



Drought

SCORE: 0.00/14
RANK: 7



Landslide

SCORE: 0.09/14
RANK: 11



Wildfire

SCORE: 0.31/14
RANK: 3



MULTI-HAZARD RISK (MHR)

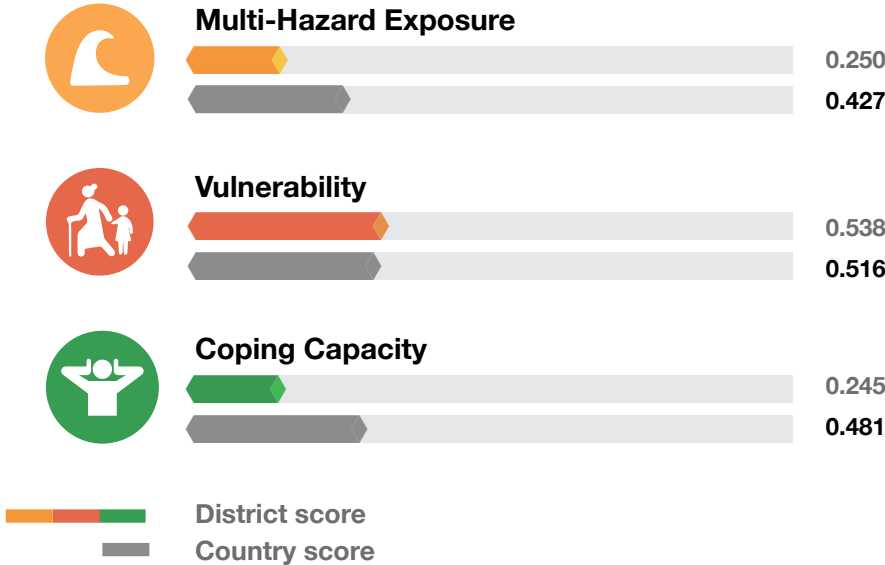
5 / 14

Rank within districts
Score: 0.514



Kambia's score and ranking are due to Low Multi-hazard exposure combined with Moderate Vulnerability and Very Low Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



KAMBIA RECOMMENDATIONS

1

Clean Water Access Vulnerability

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation in Kambia District improves health outcomes and frees up resources to decrease further susceptibility to impacts.

Findings show that just 21% of households in Kambia have access to improved sanitation facilities, coupled with a high risk of E. Coli contamination in drinking water. Invest in improved water and sanitation infrastructure to increase access and reduce exposure to disease.

2

Information Access Vulnerability

Limitations in information access can impede a population's ability to receive, understand, and take action. Emergency messages must take into account the unique information access constraints of the district. Emergency messages presented to the population of Kambia must contain clear and simple information to ensure an appropriate response to save lives and reduce losses.

Findings show that Kambia has the highest illiteracy rate in Sierra Leone, at 61%. Focus interventions on building literacy standards at the primary level, and on reducing school dropout rates. Ensure that the district has the schools and human resources to support education through the secondary level.

Encourage whole-of-community education to ensure support for education outside of the classroom, including volunteerism, school-to-work programs, and community-based learning projects.

KAMBIA RECOMMENDATIONS

1

Governance

Instability of institutional structures can make a district more susceptible to the negative effects of a disaster event. Increasing stability in Kambia District increases the likelihood that emergencies can be better managed at the local level and supports a quick return to normal functions.

Findings show that Kambia has the lowest rate of voter participation in Sierra Leone, coupled with the 5th highest rate of conflict over the last 5 years. Focus on building a governance structure that encourages community participation to build trust in government and invest in government security measures for conflict resolution in the district.

2

Energy Capacity

Homes, businesses, industry, and government all rely on access to energy resources for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability and quantity of energy reserves in Kambia will contribute to economic development and increase the speed of recovery processes in the aftermath of a disaster.

Tied with the rural districts of Koinadugu and Pujehun, Kambia district has the lowest access to electricity in Sierra Leone, with just 0.1% of homes connected to the electrical grid. Focus development programs on increasing energy capacity by establishing sustainable power generation within the district and extending the existing transmission and distribution network.

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SIERRA LEONE

KENEMA

NDPBA DISTRICT PROFILE

SIERRA LEONE

KENEMA

CAPITAL: KENEMA

Area: 6,053 km²

Kenema District is in the Eastern Province of Sierra Leone, the capital and the largest city is Kenema. The city is located on the railway line in a valley of the Kambui Hills. Kenema district lies in the eastern region of Sierra Leone and it borders with Tonkolili and Kono districts to the north, Kailahun district to the east, Pujehun district to the southwest and Bo district to the West. It also shares a border to the south with the Republic of Liberia. The main economic activity in the district is farming employing over 75% of the people. The district receives adequate rainfall and has extensive inland valley swamps that are under cultivation. The major crops grown in the district are rice, cassava, vegetables, groundnuts, garden eggs, pepper and eggplant. Cash crops come from oil. Other economic activities include sand and stone quarrying in the Moa River basin and some swamps. Great tourist opportunities exist in the game reserves of the Gola Forest and Kambui-Nimini Hills, the Tiwai Island - Koya Chieftdom - and the beaches on the Moa.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - Very Low

Score: 0.357 • Rank: 13/14



RESILIENCE (R) - Very High

Score: 0.666 • Rank: 2/14



MULTI-HAZARD EXPOSURE (MHE) - Moderate

Score: 0.403 • Rank: 8/14



VULNERABILITY (V) - Very Low

Score: 0.335 • Rank: 13/14



COPING CAPACITY (CC) - High

Score: 0.310 • Rank: 13/14



Population (2015)

609,891



Infant Mortality Rate

56



Illiterate population

52.3%



Access to improved water

87.1%



Average life expectancy

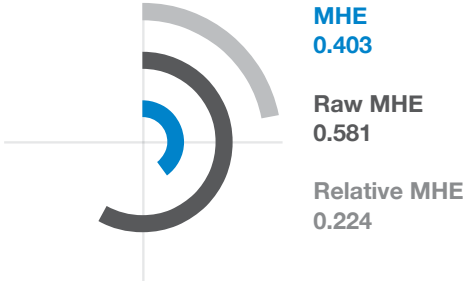
44.2 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>




MULTI-HAZARD EXPOSURE (MHE)


RANK: 8 / 14 DISTRICTS
SCORE: 0.403




ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:




Inland Flood
8.6%
56,636



Coastal Flood
0.0%
0



Landslide
36.1%
236,833



Drought
16.7%
109,760



Wildfire
12.5%
82,271



VULNERABILITY (V)

RANK: 13 / 14 DISTRICTS ASSESSED
SCORE: 0.335

Vulnerability in Kenema is primarily driven by Economic Constraints and Information Access Vulnerability. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 14/14 Districts Assessed

1.5%	151.99	9.2%	0.15	16.5%
Average Annual Forest Loss	Livestock Density (per sq km)	Erosion Potential	Ecological Change	Area Affected by Mining



Vulnerable Health Status

Rank: 12/14 Districts Assessed

44.2	56	262	1.4%	3.3%	187.2	37.7%	1.0%
Life Expectancy (years)	Infant Mortality Rate (per 1,000 live births)	Maternal Mortality Ratio	Acute Malnutrition (Children <5)	Population with Disability	Tuberculosis Incidence (per 100,000 persons)	Malaria Prevalance (per 100,000 persons)	HIV Prevalance (per 100,000 persons)



Clean Water Vulnerability

Rank: 14/14 Districts Assessed

87.1%	57.1%	67.2%	5.1%
Households with Improved Water Source	Households with Improved Sanitation	Population at High Risk of Fecal Contamination	Water Source > 30 minutes from Home



Information Access Vulnerability

Rank: 11/14 Districts Assessed

52.3%	80.1%	18.3%	15.4%	14.2%	57.0%
Illiteracy Rate (Age 10+)	Primary School Attendance Ratio	Upper Secondary Completion Rate	Households with Internet	Households with Television	Households with Internet



Economic Constraints

Rank: 11/14 Districts Assessed

78.82	2.1%	0.29	18.2%
Economic Dependency Ratio	Population in Poorest Wealth Quintile	Income Inequality (GINI)	Child Labor Participation (Age 10-14)



Gender Inequality

Rank: 14/14 Districts Assessed

0.99	1.02	0.89	1	25.6%
Female to Male Land Ownership*	Female to Male Home Ownership*	Female to Male Labor Participation*	Female to Male Secondary Education*	Female Seats in Local Council

*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 11/14 Districts Assessed

1.8%	3.1%	12.67	47.0%	32.1%
Average Annual Population Change	Average Annual Urban Population Change	Net Migration Rate	Population that is Food Insecure	Ratio of Youth (15-24) to Adult (15+)



COPING CAPACITY (CC)

RANK: 13 / 14 DISTRICTS ASSESSED
SCORE: 0.310

Kenema exhibits weaker Coping Capacity in the areas of Energy Capacity and Communications Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity



Rank: 2/14 Districts Assessed

16.3%

Households with Bank Account

97.7%

Income per Capita

16.7%

Population in Highest Wealth Quintile

4

Financial Institutions per 100k Persons



Governance



Rank: 4/14 Districts Assessed

1.48

Conflict Events per 100k Persons

85.8%

Voter Participation



Environmental Capacity



Rank: 3/14 Districts Assessed

11.0%

Protected Area



Infrastructure Capacity



Rank: 4/14 Districts Assessed



Health Care Capacity Rank: 4/14 Districts Assessed

16

Hospital Beds per 10,000 People

0.13

Physicians per 10,000 People

4.96

Nurses per 10,000 People

11.9

Average Distance to Nearest Hospital (km²)

75.5%

Vaccination Coverage



Transportation Capacity Rank: 5/14 Districts Assessed

0.76

Road Density (km per sq. km)

18.91

Distance to Airport or Seaport (km)



Communications Capacity Rank: 4/14 Districts Assessed

66.1%

Households with Mobile Phone

12.54

Cellular Towers per 100k Persons



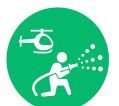
Energy Capacity Rank: 6/14 Districts Assessed

17.5%

Households Connected to Electric Grid

0.66

Fuel Stations per 100k Persons



Emergency Service Capacity



Rank: 4/14 Districts Assessed

2.79

Firefighters per 100k Persons

0.49

Search and Rescue Teams per 100k Persons

0.16

Fire Vehicles per 100k Persons



RESILIENCE (R)

RANK: 2 / 14 DISTRICTS
SCORE: 0.666

Kenema's score and ranking are due to Very Low Vulnerability combined with High Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Economic Constraints



Information Access Vulnerability



Energy Capacity



Communications Capacity



HAZARD-SPECIFIC RISK



Coastal Flood

SCORE: 0.00/14
RANK: 8



Inland Flood

SCORE: 0.16
RANK: 6



Drought

SCORE: 0.25/14
RANK: 5



Landslide

SCORE: 0.16/14
RANK: 9



Wildfire

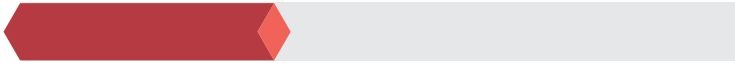
SCORE: 0.09/14
RANK: 11



MULTI-HAZARD RISK (MHR)

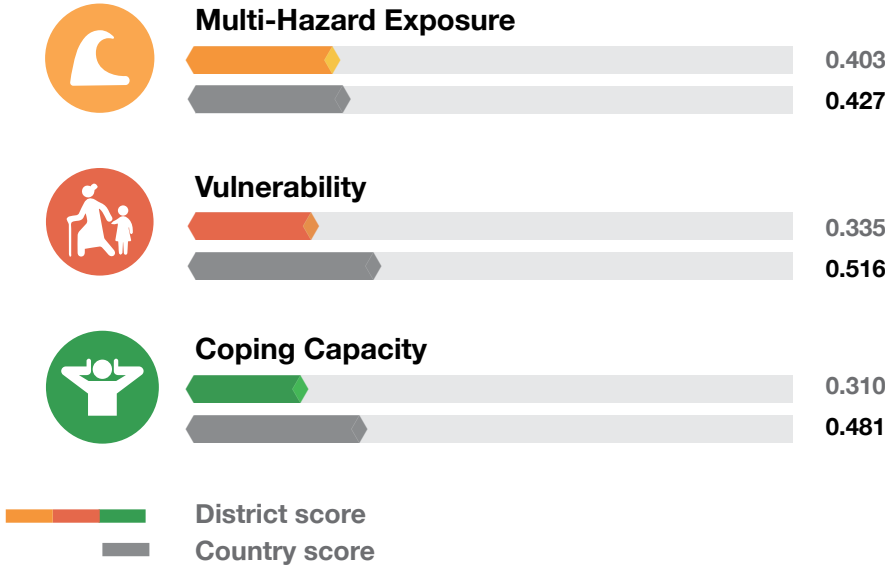
13 / 14

Rank within districts
Score: 0.357



Kenema’s score and ranking are due to Moderate Multi-hazard exposure combined with Very Low Vulnerability and High Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



KENEMA RECOMMENDATIONS

1

Economic Constraints

Economic constraints have individual, household, community, and district-wide influence. Limitations on available financial resources reduce opportunities to invest in mitigation and preparedness measures and limit Kenema District's ability to facilitate short- and long-term recovery.

Economic activity in Kenema is primarily driven by agriculture. Reduce income inequality by encouraging programs that support small business opportunities to diversify livelihoods and generate prospects for equitable distribution of property and economic assets in the district

2

Information Access Vulnerability

Limitations in information access can impede a population's ability to receive, understand, and take action. Emergency messages must take into account the unique information access constraints of the district. Emergency messages presented to the population of Kenema must contain clear and simple information to ensure an appropriate response to save lives and reduce losses.

Focus interventions on building literacy standards at the primary level, and on reducing school dropout rates. Ensure that the district has the schools and human resources to support education through the secondary level.

Encourage whole-of-community education to ensure support for education outside of the classroom, including volunteerism, school-to-work programs, and community-based learning projects.

Invest in information technology (internet, television, radio) and associated sustainable energy programs to support multimodal communications and learning environments in the district. Ensuring access to information during normal operations increases the capacity receive, comprehend, and act on critical information and disaster warnings.

KENEMA RECOMMENDATIONS

1

Energy Capacity

Homes, businesses, industry, and government all rely on access to energy resources for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability and quantity of energy reserves in Kenema will contribute to economic development and increase the speed of recovery processes in the aftermath of a disaster.

Though Kenema ranks 4th in the country in overall electricity availability, just 18% of households are connected to the electrical grid. Focus development programs on increasing energy capacity by establishing sustainable power generation within the district and extending the existing transmission and distribution network.

2

Communications Capacity

The density, diversity, resilience, and quality of communications infrastructure influence how district- and local-level populations able to facilitate effective and coordinated communication.

While Kenema District ranks 4th in overall Communications Capacity, findings indicate that just 65% of households have access to mobile phones. Pursue public-private partnerships to increase availability of affordable mobile communications and an accessible and sustainable power supply.

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SIERRA LEONE

KOINADUGU

NDPBA DISTRICT PROFILE

SIERRA LEONE Koinadugu

CAPITAL: KABALA

Area: 12,121 km²

Koinadugu District is in the Northern Province, and borders Bombali district to the west, Tonkolili district to the south-west, Kono district to the south and the Republic of Guinea to the North East. It is the largest district in terms of geographical area, with the least population density in the country. The district capital is Kabala, which is among one of the major cities in northern Sierra Leone and is set in a rural landscape, surrounded by mountains. Lake Sonfon is found in the Diang Chiefdom in Koinadugu District and it is surrounded by hills with vegetation comprising open grassland, wooded savanna and fringing forest with occasional farm bush. Agriculture is the main livelihood in the district with a high population involved in cash crop production such as cocoa and coffee, pineapples, rice and vegetables. The temperate climate and fertile soil make the district of Koinadugu ideal for agriculture. Livestock is also reared in Folosaba Dembelia Chiefdom.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - Very High

Score: 0.722 • Rank: 1/14



RESILIENCE (R) - Very Low

Score: 0.346 • Rank: 14/14



MULTI-HAZARD EXPOSURE (MHE) - Very High

Score: 0.858 • Rank: 1/14



VULNERABILITY (V) - Very High

Score: 0.618 • Rank: 2/14



COPING CAPACITY (CC) - Very Low

Score: 0.506 • Rank: 6/14



Population (2015)

409,372



Infant Mortality Rate

37



Illiterate population

59.6%



Access to improved water

46.9%



Average life expectancy

66 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>



MULTI-HAZARD EXPOSURE (MHE)

RANK: 1 / 14 DISTRICTS
SCORE: 0.858




MHE
0.858


Raw MHE
0.716


Relative MHE
1

ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:

 Inland Flood
3.0%
👤 10,148

 Coastal Flood
0.0%
👤 0

 Landslide
34.8%
👤 118,174

 Drought
96.5%
👤 327,716

 Wildfire
78.4%
👤 266,370



VULNERABILITY (V)

RANK: 2 / 14 DISTRICTS ASSESSED
SCORE: 0.618

Vulnerability in Koinadugu is primarily driven by Population Pressures and Information Access Vulnerability. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 3/14 Districts Assessed

1.2% Average Annual Forest Loss	91.57 Livestock Density (per sq km)	63.9% Erosion Potential	0.03 Ecological Change	14.1% Area Affected by Mining
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Vulnerable Health Status

Rank: 13/14 Districts Assessed

66 Life Expectancy (years)	37 Infant Mortality Rate (per 1,000 live births)	333 Maternal Mortality Ratio	2.0% Acute Malnutrition (Children <5)	3.2% Population with Disability	77.9 Tuberculosis Incidence (per 100,000 persons)	57.9% Malaria Prevalance (per 100,000 persons)	1.0% HIV Prevalance (per 100,000 persons)
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Clean Water Vulnerability

Rank: 5/14 Districts Assessed

46.9% Households with Improved Water Source	37.5% Households with Improved Sanitation	87.9% Population at High Risk of Fecal Contamination	8.8% Water Source > 30 minutes from Home
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Information Access Vulnerability

Rank: 4/14 Districts Assessed

59.6% Illiteracy Rate (Age 10+)	69.5% Primary School Attendance Ratio	11.5% Upper Secondary Completion Rate	7.2% Households with Internet	1.0% Households with Television	47.6% Households with Internet
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Economic Constraints

Rank: 4/14 Districts Assessed

83.85 Economic Dependency Ratio	8.6% Population in Poorest Wealth Quintile	0.22 Income Inequality (GINI)	36.5% Child Labor Participation (Age 10-14)
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Gender Inequality

Rank: 10/14 Districts Assessed

0.61 Female to Male Land Ownership*	0.88 Female to Male Home Ownership*	1.01 Female to Male Labor Participation*	0.68 Female to Male Secondary Education*	11.1% Female Seats in Local Council
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*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 1/14 Districts Assessed

3.9% Average Annual Population Change	19.5% Average Annual Urban Population Change	17.36 Net Migration Rate	62.5% Population that is Food Insecure	40.6% Ratio of Youth (15-24) to Adult (15+)
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COPING CAPACITY (CC)

RANK: 6 / 14 DISTRICTS ASSESSED
SCORE: 0.506

Koinadugu exhibits weaker Coping Capacity in the areas of Emergency Service Capacity and Energy Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity



Rank: 10/14 Districts Assessed

9.4%

Households with Bank Account

99.0%

Income per Capita

1.7%

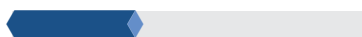
Population in Highest Wealth Quintile

0.38

Financial Institutions per 100k Persons



Governance



Rank: 12/14 Districts Assessed

1.22

Conflict Events per 100k Persons

67.6%

Voter Participation



Environmental Capacity



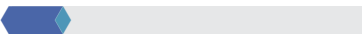
Rank: 7/14 Districts Assessed

5.1%

Protected Area



Infrastructure Capacity



Rank: 12/14 Districts Assessed



Health Care Capacity Rank: 14/14 Districts Assessed

9

Hospital Beds per 10,000 People

0.09

Physicians per 10,000 People

1.8

Nurses per 10,000 People

19.14

Average Distance to Nearest Hospital (km²)

68.4%

Vaccination Coverage



Transportation Capacity Rank: 10/14 Districts Assessed

0.42

Road Density (km per sq. km)

37.85

Distance to Airport or Seaport (km)



Communications Capacity Rank: 13/14 Districts Assessed

57.2%

Households with Mobile Phone

5.99

Cellular Towers per 100k Persons



Energy Capacity Rank: 11/14 Districts Assessed

0.1%

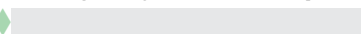
Households Connected to Electric Grid

0.21

Fuel Stations per 100k Persons



Emergency Service Capacity



Rank: 10/14 Districts Assessed

0

Firefighters per 100k Persons

0

Search and Rescue Teams per 100k Persons

0

Fire Vehicles per 100k Persons



RESILIENCE (R)

RANK: 14 / 14 DISTRICTS
SCORE: 0.346

Koinadugu's score and ranking are due to Very High Vulnerability combined with Very Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Population Pressures



Information Access Vulnerability



Emergency Service Capacity



Energy Capacity



HAZARD-SPECIFIC RISK



Coastal Flood

SCORE: 0.00/14
RANK: 8



Inland Flood

SCORE: 0.00
RANK: 14



Drought

SCORE: 0.64/14
RANK: 1



Landslide

SCORE: 0.24/14
RANK: 7



Wildfire

SCORE: 0.57/14
RANK: 1



MULTI-HAZARD RISK (MHR)

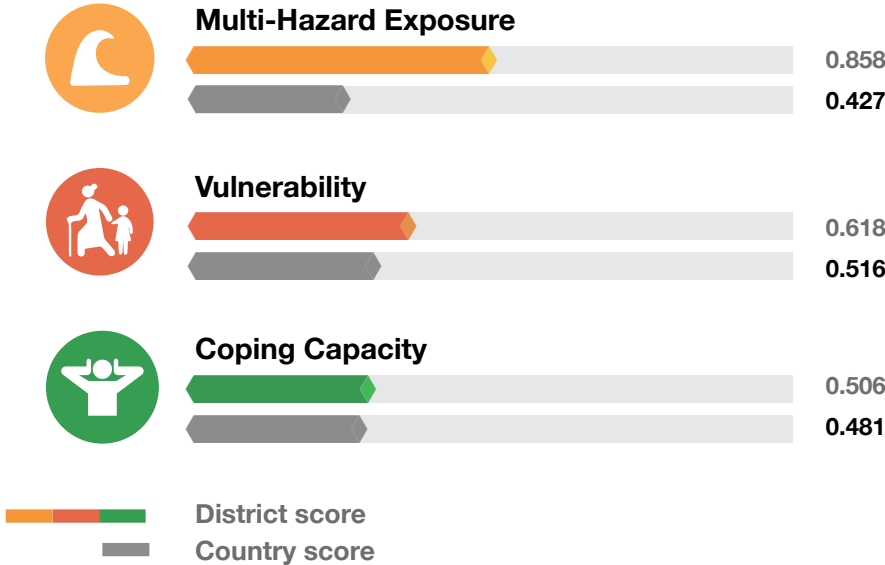
1 / 14

Rank within districts
Score: 0.722



Koinadugu’s score and ranking are due to Very High Multi-hazard exposure combined with Very High Vulnerability and Very Low Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



KOINADUGU RECOMMENDATIONS

1

Population Pressures

Rapid changes in population size and distribution can alter population vulnerability characteristics presenting planning challenges and destabilizing social, economic, and environmental systems. Increased population pressures require disaster managers to realign needs, institutional structures, and available resources to support delivery of basic resources before, during, and after an event.

Koinadugu ranks highest in the country in population pressures, with notable increases in average annual population change (4%) and urban population change (20%) from 2004 to 2015. Sixty-two percent of the population is food insecure, and findings show that the country's largest youth bulge (41%) is in Koinadugu.

Closely monitor population changes and implement security measures to anticipate pressures on district resources and infrastructure that could give way to instability or conflict.

Findings show that Koinadugu is highly exposed to drought and wildfire, and moderately exposed to landslides. Establish multi-hazard preparedness and response planning at the district level, and perform regular updates to plans and SOPs to account for increases in total, urban, and youth population.

2

Information Access Vulnerability

Limitations in information access can impede a population's ability to receive, understand, and take action. Emergency messages must take into account the unique information access constraints of the district. Emergency messages presented to the population of Koinadugu District must contain clear and simple information to ensure an appropriate response to save lives and reduce losses.

Focus interventions on building literacy standards at the primary level, and on reducing school dropout rates. Ensure that the district has the schools and human resources to support education through the secondary level.

Encourage whole-of-community education to ensure support for education outside of the classroom, including volunteerism, school-to-work programs, and community-based learning projects.

Invest in information technology (internet, television, radio) and associated sustainable energy programs to support multimodal communications and learning environments in the district. Ensuring access to information during normal operations increases the capacity to receive, comprehend, and act on critical information and disaster warnings. Koinadugu district is exposed to drought, wildfire, landslide, and inland flood hazards.

KOINADUGU RECOMMENDATIONS

1

Emergency Service Capacity

Societies establish capacities to manage emergencies that scale from day-to-day events up to catastrophes that impact all of society. Establishing and maintaining a broad range of systems and resources to support emergency services in Koinadugu will increase the capacity for disaster management and response.

Koinadugu district participated in the Sierra Leone Red Cross Community Disaster Preparedness program, including training, and plan and exercise development. Continue building community and volunteer fire and emergency response corps. Identify government or external resources to conduct emergency services training and conduct district-level exercises on a regular basis.

2

Energy Capacity

Homes, businesses, industry, and government all rely on access to energy resources for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability and quantity of energy reserves in Koinadugu will contribute to economic development and increase the speed of recovery processes in the aftermath of a disaster.

Tied with the rural districts of Kambia and Pujehun, Koinadugu district has the lowest access to electricity in Sierra Leone, with just 0.1% of homes connected to the electrical grid. Focus development programs on increasing energy capacity by establishing sustainable power generation within the district and extending the existing transmission and distribution network.

Incentivize construction of gas stations and fuel storage infrastructure to increase fuel capacity and availability.

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SIERRA LEONE

KONO

NDPBA DISTRICT PROFILE

SIERRA LEONE

KONO

CAPITAL: KOIDU TOWN

Area: 5,641 km²

Kono District is located in the Eastern Province of Sierra Leone. Its capital and largest city is Koidu Town. The District borders Kenema District to the southwest, The Republic of Guinea to the east, Koinadugu District to the northeast and Kailahun District to the southeast. The other major towns in the district are Motema, Yengema, Tombodu, Jaiama Nimikoro and Sewafe. This district is divided into fourteen chiefdoms. Kono District is the largest diamond producer in Sierra Leone having contributed the second and third biggest gem stones ever mined on earth. Large-scale gold mining is uncommon, but the alluvial/artisanal mining is a household practice. Other important economic activities include gold mining and agricultural production of rice, cassava, corn, coffee and cacao. Sand and clay mining are carried out along streams and swamps, leading to the degradation of soil fertility.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - Very High

Score: 0.648 • Rank: 2/14



RESILIENCE (R) - Low

Score: 0.407 • Rank: 10/14



MULTI-HAZARD EXPOSURE (MHE) - High

Score: 0.757 • Rank: 3/14



VULNERABILITY (V) - High

Score: 0.577 • Rank: 4/14



COPING CAPACITY (CC) - Low

Score: 0.414 • Rank: 8/14



Population (2015)

506,100



Infant Mortality Rate

68



Illiterate population

52.6%



Access to improved water

65.1%



Average life expectancy

55 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>



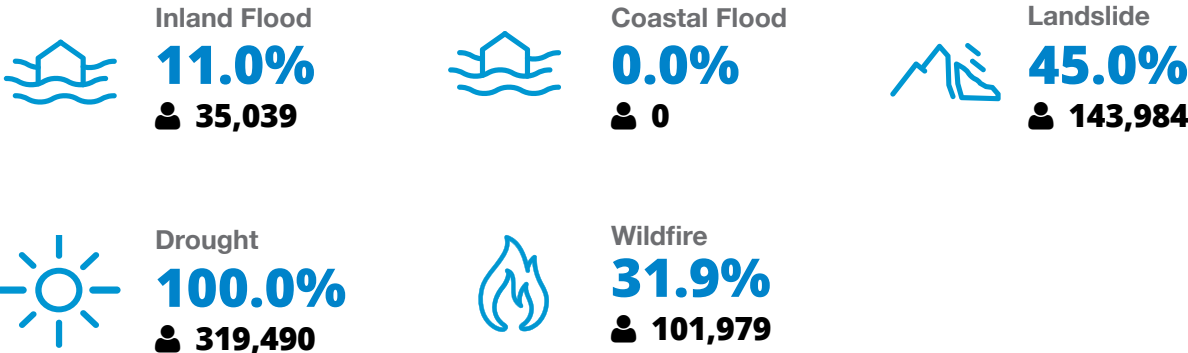
MULTI-HAZARD EXPOSURE (MHE)

RANK: 3 / 14 DISTRICTS
SCORE: 0.757



MHE
0.757
Raw MHE
0.653
Relative MHE
0.861

ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:





VULNERABILITY (V)

RANK: 4 / 14 DISTRICTS ASSESSED
SCORE: 0.577

Vulnerability in Kono is primarily driven by Gender Inequality and Information Access Vulnerability. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 6/14 Districts Assessed

1.4%	61.27	30.1%	-0.08	8.3%
Average Annual Forest Loss	Livestock Density (per sq km)	Erosion Potential	Ecological Change	Area Affected by Mining



Vulnerable Health Status

Rank: 1/14 Districts Assessed

55	68	601	1.6%	5.2%	198.3	37.5%	2.5%
Life Expectancy (years)	Infant Mortality Rate (per 1,000 live births)	Maternal Mortality Ratio	Acute Malnutrition (Children <5)	Population with Disability	Tuberculosis Incidence (per 100,000 persons)	Malaria Prevalance (per 100,000 persons)	HIV Prevalance (per 100,000 persons)



Clean Water Vulnerability

Rank: 6/14 Districts Assessed

65.1%	35.9%	79.1%	19.2%
Households with Improved Water Source	Households with Improved Sanitation	Population at High Risk of Fecal Contamination	Water Source > 30 minutes from Home



Information Access Vulnerability

Rank: 8/14 Districts Assessed

52.6%	85.8%	8.8%	9.3%	4.7%	51.8%
Illiteracy Rate (Age 10+)	Primary School Attendance Ratio	Upper Secondary Completion Rate	Households with Internet	Households with Television	Households with Internet



Economic Constraints

Rank: 10/14 Districts Assessed

80.3	9.1%	0.26	20.2%
Economic Dependency Ratio	Population in Poorest Wealth Quintile	Income Inequality (GINI)	Child Labor Participation (Age 10-14)



Gender Inequality

Rank: 2/14 Districts Assessed

1.94	1.3	0.88	1.39	23.1%
Female to Male Land Ownership*	Female to Male Home Ownership*	Female to Male Labor Participation*	Female to Male Secondary Education*	Female Seats in Local Council

*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 8/14 Districts Assessed

3.7%	0.8%	14.4	46.8%	34.6%
Average Annual Population Change	Average Annual Urban Population Change	Net Migration Rate	Population that is Food Insecure	Ratio of Youth (15-24) to Adult (15+)



COPING CAPACITY (CC)

RANK: 8 / 14 DISTRICTS ASSESSED
SCORE: 0.414

Kono exhibits weaker Coping Capacity in the areas of Governance and Energy Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity



Rank: 6/14 Districts Assessed

15.4%

Households with Bank Account

96.5%

Income per Capita

7.9%

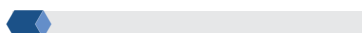
Population in Highest Wealth Quintile

2.76

Financial Institutions per 100k Persons



Governance



Rank: 14/14 Districts Assessed

2.57

Conflict Events per 100k Persons

69.3%

Voter Participation



Environmental Capacity



Rank: 4/14 Districts Assessed

10.3%

Protected Area



Infrastructure Capacity



Rank: 5/14 Districts Assessed



Health Care Capacity Rank: 6/14 Districts Assessed

15

Hospital Beds per 10,000 People

0.2

Physicians per 10,000 People

2.01

Nurses per 10,000 People

11.33

Average Distance to Nearest Hospital (km²)

72.4%

Vaccination Coverage



Transportation Capacity Rank: 4/14 Districts Assessed

0.99

Road Density (km per sq. km)

18.51

Distance to Airport or Seaport (km)



Communications Capacity Rank: 6/14 Districts Assessed

66.9%

Households with Mobile Phone

9.19

Cellular Towers per 100k Persons



Energy Capacity Rank: 7/14 Districts Assessed

6.4%

Households Connected to Electric Grid

0.71

Fuel Stations per 100k Persons



Emergency Service Capacity



Rank: 5/14 Districts Assessed

2.17

Firefighters per 100k Persons

0.4

Search and Rescue Teams per 100k Persons

0.2

Fire Vehicles per 100k Persons



RESILIENCE (R)

RANK: 10 / 14 DISTRICTS
SCORE: 0.407

Kono's score and ranking are due to High Vulnerability combined with Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Gender Inequality



Information Access Vulnerability



Governance



Energy Capacity



HAZARD-SPECIFIC RISK



Coastal Flood

SCORE: 0.00/14
RANK: 8



Inland Flood

SCORE: 0.28
RANK: 3



Drought

SCORE: 0.59/14
RANK: 2



Landslide

SCORE: 0.29/14
RANK: 5



Wildfire

SCORE: 0.25/14
RANK: 6



MULTI-HAZARD RISK (MHR)

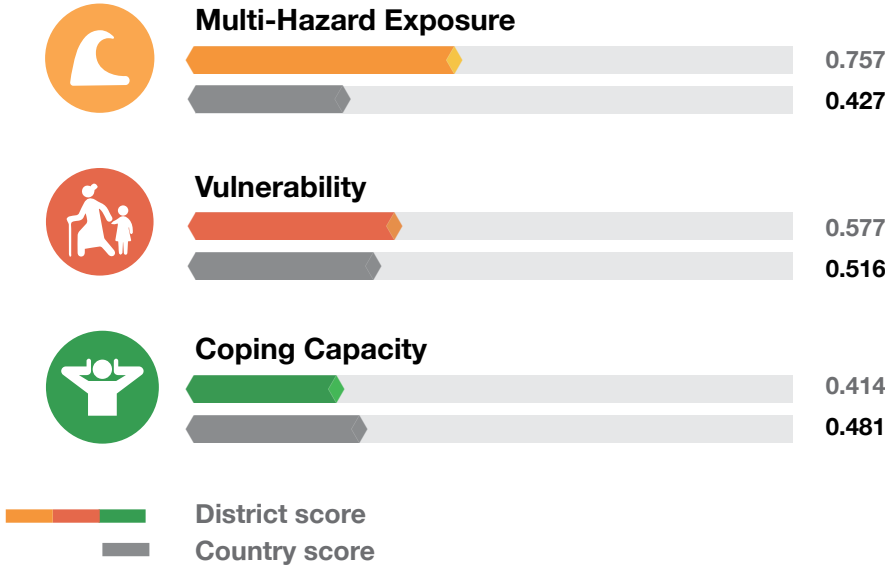
2 / 14

Rank within districts
Score: 0.648



Kono's score and ranking are due to High Multi-hazard exposure combined with High Vulnerability and Low Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



KONO RECOMMENDATIONS

1

Gender Inequality

Marginalized populations are less likely to have their needs met under pre-disaster conditions, and therefore become even more susceptible to harm during times of disaster. Increase gender-based inclusion in all phases of DM, ensuring the implementation at the district and local levels. Course of action must recognize the role of women in society and support changes to policies and programs to promote gender-equal access.

Focus efforts to support equal labor participation by diversifying economic opportunities for women in the district.

Encourage women to participate in the planning and decision-making process through inclusion in the district disaster management committee and representation in local council.

Support equal participation in secondary education for men and women by promoting school-to-work programs, integrating youth education with job training and labor market information.

2

Information Access Vulnerability

Limitations in information access can impede a population's ability to receive, understand, and take action. Emergency messages must take into account the unique information access constraints of the district. Emergency messages presented to the population of Kono District must contain clear and simple information to ensure an appropriate response to save lives and reduce losses.

Focus interventions on building literacy standards at the primary level, and on reducing school dropout rates. Ensure that the district has the schools and human resources to support education through the secondary level.

Encourage whole-of-community education to ensure support for education outside of the classroom, including volunteerism, school-to-work programs, and community-based learning projects.

Invest in information technology (internet, television, radio) and associated sustainable energy programs to support multimodal communications and learning environments in the district. Ensuring access to information during normal operations increases the capacity receive, comprehend, and act on critical information and disaster warnings. Kono district is exposed to drought, landslide, wildfire, and inland flood hazards.

KONO RECOMMENDATIONS

1

Governance

Instability of institutional structures can make a district more susceptible to the negative effects of a disaster event. Increasing stability in Kono increases the likelihood that emergencies can be better managed at the local level and supports a quick return to normal functions.

Findings show that Kono district has the lowest score for Governance in Sierra Leone, characterized by high conflict incidence and low voter participation. Focus on building a governance structure that encourages community participation to build trust in government and invest in government security measures for conflict resolution in the district.

2

Energy Capacity

Homes, businesses, industry, and government all rely on access to energy resources for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability and quantity of energy reserves in Kono will contribute to economic development and increase the speed of recovery processes in the aftermath of a disaster.

Only 6% Households are connected to the electrical grid in Kono District. Focus development programs on increasing energy capacity by establishing sustainable power generation within the district and extending the existing transmission and distribution network.

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ndpba.sle@pdc.org



SIERRA LEONE

MOYAMBA

NDPBA DISTRICT PROFILE

SIERRA LEONE

MOYAMBA

CAPITAL: MOYAMBA

Area: 6,902 km²

Moyamba District is in the Southern Province with and borders the Atlantic Ocean in the west, Port Loko district and Tonkolili district to the north, Bo district to the east and Bonthe district to the south. Its capital and largest city is Moyamba Town. The district is the largest in the Southern Province by geographical area, occupying a total area of 6,902 km² and comprises fourteen chiefdoms. It is predominantly inhabited by the Mende people, with other ethnic groups comprising Sherbro, Temne and Loko. The main economic activities include mining - rutile and bauxite - and agriculture - crop farming, fishing, rice growing and oil palm plantations. The port of Nitti in Lower Banta chiefdom is the lifeline of the mining sector. It provides the only deep-water port in the south suitable for direct mechanical loading and offloading. Moyamba District is home to the Njala University, which has the potential of training high caliber human resources, especially in agricultural and environmental science.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - Low

Score: 0.414 • Rank: 10/14



RESILIENCE (R) - Moderate

Score: 0.449 • Rank: 7/14



MULTI-HAZARD EXPOSURE (MHE) - Very Low

Score: 0.140 • Rank: 13/14



VULNERABILITY (V) - Moderate

Score: 0.556 • Rank: 6/14



COPING CAPACITY (CC) - Moderate

Score: 0.650 • Rank: 4/14



Population (2015)

318,588



Infant Mortality Rate

40



Illiterate population

59.9%



Access to improved water

29.3%



Average life expectancy

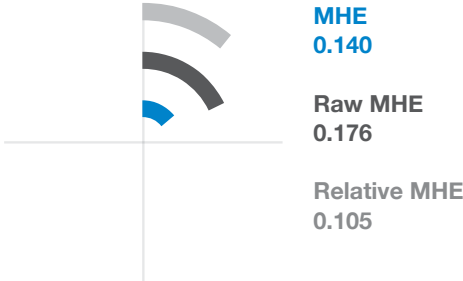
44.3 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>




MULTI-HAZARD EXPOSURE (MHE)


RANK: 13 / 14 DISTRICTS
SCORE: 0.140




ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:




Inland Flood
5.9%
16,320



Coastal Flood
0.4%
1,144



Landslide
28.6%
79,266



Drought
0.0%
0



Wildfire
17.9%
49,599



VULNERABILITY (V)

RANK: 6 / 14 DISTRICTS ASSESSED
SCORE: 0.556

Vulnerability in Moyamba is primarily driven by Economic Constraints and Information Access Vulnerability. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 10/14 Districts Assessed

2.0% Average Annual Forest Loss	52.1 Livestock Density (per sq km)	19.5% Erosion Potential	0.1 Ecological Change	14.3% Area Affected by Mining
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Vulnerable Health Status

Rank: 9/14 Districts Assessed

44.3 Life Expectancy (years)	40 Infant Mortality Rate (per 1,000 live births)	207 Maternal Mortality Ratio	5.7% Acute Malnutrition (Children <5)	5.3% Population with Disability	88.9 Tuberculosis Incidence (per 100,000 persons)	39.9% Malaria Prevalance (per 100,000 persons)	1.0% HIV Prevalance (per 100,000 persons)
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Clean Water Vulnerability

Rank: 4/14 Districts Assessed

29.3% Households with Improved Water Source	42.7% Households with Improved Sanitation	94.4% Population at High Risk of Fecal Contamination	2.7% Water Source > 30 minutes from Home
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Information Access Vulnerability

Rank: 5/14 Districts Assessed

59.9% Illiteracy Rate (Age 10+)	69.9% Primary School Attendance Ratio	3.3% Upper Secondary Completion Rate	6.2% Households with Internet	1.8% Households with Television	56.7% Households with Internet
---	---	--	---	---	--



Economic Constraints

Rank: 1/14 Districts Assessed

85.31 Economic Dependency Ratio	0.0% Population in Poorest Wealth Quintile	0.32 Income Inequality (GINI)	24.0% Child Labor Participation (Age 10-14)
---	--	---	---



Gender Inequality

Rank: 4/14 Districts Assessed

2.04 Female to Male Land Ownership*	1.24 Female to Male Home Ownership*	0.93 Female to Male Labor Participation*	0.73 Female to Male Secondary Education*	13.6% Female Seats in Local Council
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*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 14/14 Districts Assessed

1.8% Average Annual Population Change	2.2% Average Annual Urban Population Change	1.45 Net Migration Rate	26.5% Population that is Food Insecure	31.1% Ratio of Youth (15-24) to Adult (15+)
---	---	-----------------------------------	--	---



COPING CAPACITY (CC)

RANK: 4 / 14 DISTRICTS ASSESSED
SCORE: 0.650

Moyamba exhibits weaker Coping Capacity in the areas of Energy Capacity and Emergency Service Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity



Rank: 9/14 Districts Assessed

7.9%

Households with Bank Account

98.3%

Income per Capita

2.8%

Population in Highest Wealth Quintile

1.97

Financial Institutions per 100k Persons



Governance



Rank: 2/14 Districts Assessed

0.63

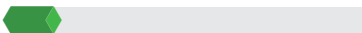
Conflict Events per 100k Persons

81.3%

Voter Participation



Environmental Capacity



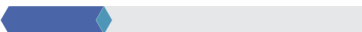
Rank: 12/14 Districts Assessed

0.5%

Protected Area



Infrastructure Capacity



Rank: 9/14 Districts Assessed



Health Care Capacity Rank: 13/14 Districts Assessed

10

Hospital Beds per 10,000 People

0.12

Physicians per 10,000 People

2.24

Nurses per 10,000 People

17.75

Average Distance to Nearest Hospital (km²)

59.2%

Vaccination Coverage



Transportation Capacity Rank: 9/14 Districts Assessed

0.47

Road Density (km per sq. km)

35.49

Distance to Airport or Seaport (km)



Communications Capacity Rank: 7/14 Districts Assessed

60.1%

Households with Mobile Phone

10.4

Cellular Towers per 100k Persons



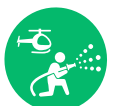
Energy Capacity Rank: 9/14 Districts Assessed

1.4%

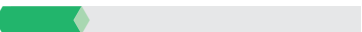
Households Connected to Electric Grid

0.27

Fuel Stations per 100k Persons



Emergency Service Capacity



Rank: 9/14 Districts Assessed

1.57

Firefighters per 100k Persons

0.31

Search and Rescue Teams per 100k Persons

0

Fire Vehicles per 100k Persons



RESILIENCE (R)

RANK: 7 / 14 DISTRICTS
SCORE: 0.449

Moyamba's score and ranking are due to Moderate Vulnerability combined with Moderate Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Economic Constraints



Information Access Vulnerability



Energy Capacity



Emergency Service Capacity



HAZARD-SPECIFIC RISK



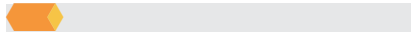
Coastal Flood



SCORE: 0.27/14
RANK: 6



Inland Flood



SCORE: 0.12
RANK: 9



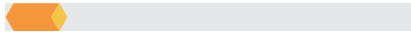
Drought



SCORE: 0.00/14
RANK: 7



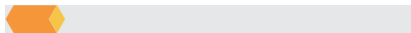
Landslide



SCORE: 0.13/14
RANK: 10



Wildfire



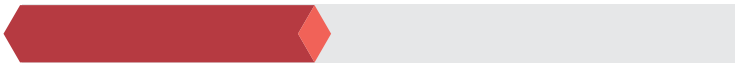
SCORE: 0.13/14
RANK: 8



MULTI-HAZARD RISK (MHR)

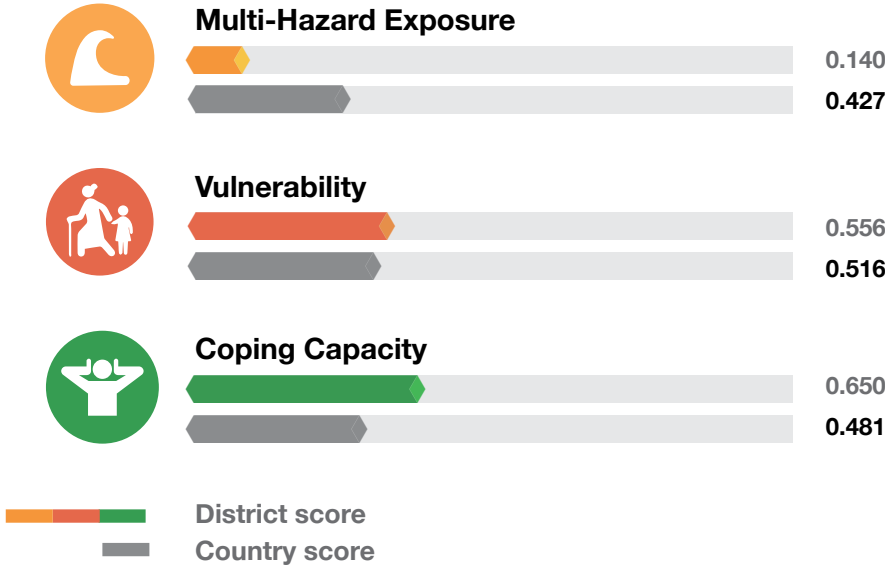
10 / 14

Rank within districts
Score: 0.414



Moyamba's score and ranking are due to Very Low Multi-hazard exposure combined with Moderate Vulnerability and Moderate Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



MOYAMBA RECOMMENDATIONS

1

Economic Constraints

Economic constraints have individual, household, community, and district-wide influence. Limitations on available financial resources reduce opportunities to invest in mitigation and preparedness measures and limit Moyamba District's ability to facilitate short- and long-term recovery.

Moyamba district ranks highest in the country in overall economic constraints, characterized by the highest income inequality in Sierra Leone, combined with very high economic dependency ratio, a high proportion of the population in Sierra Leone's poorest wealth quintile, and a high rate of child labor.

Reduce income inequality by encouraging programs that support small business opportunities to diversify livelihoods (beyond agriculture and extractive industry) and generate prospects for equitable distribution of property and economic assets in the district. Reduce the burden of a high economic dependency ratio through social benefit programs that help support the elderly and families with children.

Economic constraints in Moyamba are closely linked to Information Access Vulnerability and vice versa. Removing economic barriers to education, and ensuring equitable access to schools, educational resources, and information technology will reduce vulnerability in the District.

2

Information Access Vulnerability

Limitations in information access can impede a population's ability to receive, understand, and take action. Emergency messages must take into account the unique information access constraints of the district. Emergency messages presented to the population of Moyamba must contain clear and simple information to ensure an appropriate response to save lives and reduce losses.

Findings show that Moyamba District has the lowest completion rate for secondary education in Sierra Leone (3%), coupled with high illiteracy and low primary school attendance. Focus on reducing economic barriers to school attendance, promoting stable household living conditions, and reducing child labor.

Focus interventions on building literacy standards at the primary level, and on reducing school dropout rates. Ensure that the district has the schools and human resources to support education through the secondary level. Encourage whole-of-community education to ensure support for education outside of the classroom, including volunteerism, school-to-work programs, and community-based learning projects

Few households in Moyamba have access to internet and television, while nearly 57% have a radio. Moyamba district is exposed to landslides, wildfire, inland and coastal flood hazards. While investing to diversify access to communication technology (internet, television), officials should broadcast critical information and disaster warnings primarily via radio to keep the population informed and ensure that appropriate actions are taken. Increase distribution of radios to underserved populations.

MOYAMBA RECOMMENDATIONS

1

Energy Capacity

Homes, businesses, industry, and government all rely on access to energy resources for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability and quantity of energy reserves in Moyamba will contribute to economic development and increase the speed of recovery processes in the aftermath of a disaster.

Focus development programs on increasing energy capacity by establishing sustainable power generation within the district and extending the existing transmission and distribution network.

Incentivize construction of gas stations and fuel storage infrastructure to increase fuel capacity and availability.

2

Emergency Service Capacity

Societies establish capacities to manage emergencies that scale from day-to-day events up to catastrophes that impact all of society. Establishing and maintaining a broad range of systems and resources to support emergency services in Moyamba will increase the capacity for disaster management and response.

While the National Fire Force maintains a presence in Moyamba, including a fire department and search and rescue team, findings show few or no purpose-built firefighting vehicles in the district.

Moyamba district participated in the Sierra Leone Red Cross Community Disaster Preparedness program, including training, and plan and exercise development. Continue building volunteer fire and emergency response corps and community-based efforts modeled on community emergency response team examples.

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SIERRA LEONE

PORT LOKO

NDPBA DISTRICT PROFILE

SIERRA LEONE PORT LOKO

CAPITAL: PORT LOKO

Area: 5,719 km²

Port Loko borders the Western Area to the west, Kambia district to the North, Bombali district to the East and Tonkolili district to the South. Lunsar is the district's largest town. The city of Port Loko is a major trade center in the Northern Province. There are several mineral deposits in the district including iron ore, gold and bauxite. The main economic activities include mining and production of food crops such as rice, cassava, and sweet potato.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - Low

Score: 0.418 • Rank: 9/14



RESILIENCE (R) - Moderate

Score: 0.487 • Rank: 6/14



MULTI-HAZARD EXPOSURE (MHE) - Low

Score: 0.229 • Rank: 11/14



VULNERABILITY (V) - Low

Score: 0.531 • Rank: 9/14



COPING CAPACITY (CC) - Moderate

Score: 0.375 • Rank: 11/14



Population (2015)

615,376



Infant Mortality Rate

60



Illiterate population

57.0%



Access to improved water

52.2%



Average life expectancy

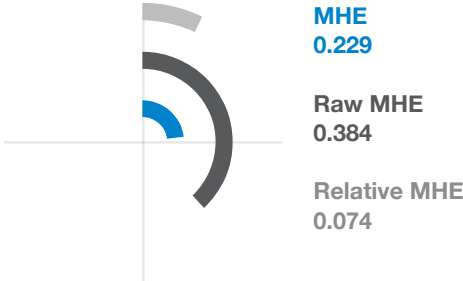
39 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>





MULTI-HAZARD EXPOSURE (MHE)


RANK: 11 / 14 DISTRICTS
SCORE: 0.229




ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:

 Inland Flood
3.9%
👤 22,492

 Coastal Flood
1.5%
👤 8,621

 Landslide
32.3%
👤 184,846

 Drought
0.0%
👤 0

 Wildfire
9.5%
👤 54,652



VULNERABILITY (V)

RANK: 9 / 14 DISTRICTS ASSESSED
SCORE: 0.531

Vulnerability in Port Loko is primarily driven by Clean Water Access Vulnerability and Environmental Stress. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 2/14 Districts Assessed

1.8%	12.6	31.7%	-0.23	22.2%
Average Annual Forest Loss	Livestock Density (per sq km)	Erosion Potential	Ecological Change	Area Affected by Mining



Vulnerable Health Status

Rank: 2/14 Districts Assessed

39	60	239	3.9%	4.5%	202.1	58.5%	1.5%
Life Expectancy (years)	Infant Mortality Rate (per 1,000 live births)	Maternal Mortality Ratio	Acute Malnutrition (Children <5)	Population with Disability	Tuberculosis Incidence (per 100,000 persons)	Malaria Prevalance (per 100,000 persons)	HIV Prevalance (per 100,000 persons)



Clean Water Vulnerability

Rank: 2/14 Districts Assessed

52.2%	37.9%	91.5%	21.7%
Households with Improved Water Source	Households with Improved Sanitation	Population at High Risk of Fecal Contamination	Water Source > 30 minutes from Home



Information Access Vulnerability

Rank: 9/14 Districts Assessed

57.0%	82.2%	21.2%	15.4%	10.6%	57.7%
Illiteracy Rate (Age 10+)	Primary School Attendance Ratio	Upper Secondary Completion Rate	Households with Internet	Households with Television	Households with Internet



Economic Constraints

Rank: 9/14 Districts Assessed

81.83	6.0%	0.27	16.2%
Economic Dependency Ratio	Population in Poorest Wealth Quintile	Income Inequality (GINI)	Child Labor Participation (Age 10-14)



Gender Inequality

Rank: 13/14 Districts Assessed

0.71	0.76	0.94	1.01	17.1%
Female to Male Land Ownership*	Female to Male Home Ownership*	Female to Male Labor Participation*	Female to Male Secondary Education*	Female Seats in Local Council

*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 12/14 Districts Assessed

2.8%	11.8%	1.57	30.5%	33.5%
Average Annual Population Change	Average Annual Urban Population Change	Net Migration Rate	Population that is Food Insecure	Ratio of Youth (15-24) to Adult (15+)



COPING CAPACITY (CC)

RANK: 11 / 14 DISTRICTS ASSESSED
SCORE: 0.375

Port Loko exhibits weaker Coping Capacity in the areas of Emergency Service Capacity and Communications Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity



Rank: 8/14 Districts Assessed

14.4%

Households with Bank Account

96.1%

Income per Capita

13.1%

Population in Highest Wealth Quintile

1.19

Financial Institutions per 100k Persons



Governance



Rank: 3/14 Districts Assessed

0.49

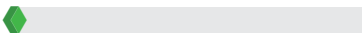
Conflict Events per 100k Persons

78.4%

Voter Participation



Environmental Capacity



Rank: 13/14 Districts Assessed

0.1%

Protected Area



Infrastructure Capacity



Rank: 7/14 Districts Assessed



Health Care Capacity Rank: 10/14 Districts Assessed

13

Hopital Beds per 10,000 People

0.13

Physicians per 10,000 People

2.93

Nurses per 10,000 People

10.03

Average Distance to Nearest Hospital (km²)

53.0%

Vaccination Coverage



Transportation Capacity Rank: 3/14 Districts Assessed

1.37

Road Density (km per sq. km)

32.59

Distance to Airport or Seaport (km)



Communications Capacity Rank: 8/14 Districts Assessed

70.1%

Households with Mobile Phone

8.25

Cellular Towers per 100k Persons



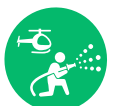
Energy Capacity Rank: 5/14 Districts Assessed

11.3%

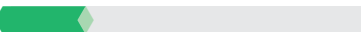
Households Connected to Electric Grid

1.28

Fuel Stations per 100k Persons



Emergency Service Capacity



Rank: 7/14 Districts Assessed

0

Firefighters per 100k Persons

0

Search and Rescue Teams per 100k Persons

0.16

Fire Vehicles per 100k Persons



RESILIENCE (R)

RANK: 6 / 14 DISTRICTS
SCORE: 0.487

Port Loko's score and ranking are due to Low Vulnerability combined with Moderate Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Clean Water
Access
Vulnerability**



**Environmental
Stress**



**Emergency Service
Capacity**



**Communications
Capacity**



HAZARD-SPECIFIC RISK



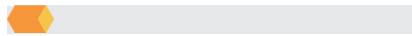
Coastal Flood



SCORE: 0.34/14
RANK: 4



Inland Flood



SCORE: 0.09
RANK: 12



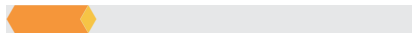
Drought



SCORE: 0.00/14
RANK: 7



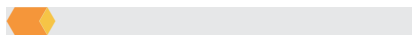
Landslide



SCORE: 0.21/14
RANK: 8



Wildfire



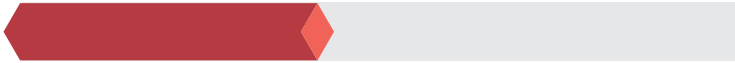
SCORE: 0.09/14
RANK: 9



MULTI-HAZARD RISK (MHR)

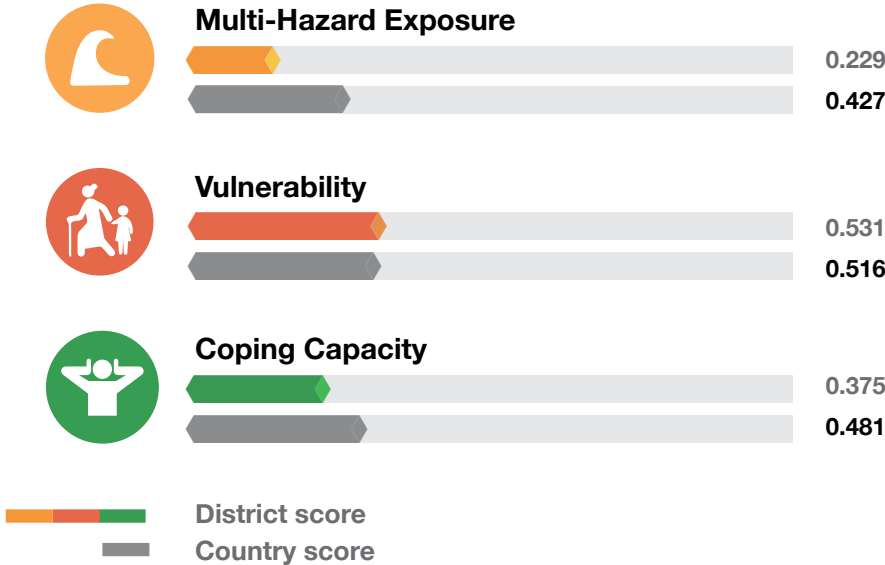
9 / 14

Rank within districts
Score: 0.418



Port Loko's score and ranking are due to Low Multi-hazard exposure combined with Low Vulnerability and Moderate Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



PORT LOKO RECOMMENDATIONS

1

Clean Water Access Vulnerability

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation in Port Loko improves health outcomes and frees up resources to decrease further susceptibility to impacts.

Findings show that Port Loko district ranks 2nd in overall clean water vulnerability, with reduced access to improved water and sanitation. This is combined with high risk of E. Coli contamination in drinking water, and high proportion of households reporting a time-consuming process for water collection

Invest in improved water and sanitation infrastructure to increase access and reduce exposure to disease.

2

Environmental Stress

Environmental stressors such as the depletion, degradation, or contamination of natural resources can exacerbate natural hazards and negatively impact the health, safety, and economic security of Port Loko's population.

Focus on protecting environmental resources from degradation, deforestation, and pressures from mining operations. These environmental stresses increase the likelihood of hazard events and have wider implications for negative impacts on health and livelihoods, decreasing resilience.

PORT LOKO RECOMMENDATIONS

1

Emergency Service Capacity

Societies establish capacities to manage emergencies that scale from day-to-day events up to catastrophes that impact all of society. Establishing and maintaining a broad range of systems and resources to support emergency services in Port Loko will increase the capacity for disaster management and response.

Findings showed that Port Loko district has one fire engine, located at Lungi, with few other resources to support emergency service capacity. Focus on building community and volunteer fire and emergency response corps.

Identify government or external resources to conduct emergency services training and conduct district-level exercises on a regular basis.

Connect vulnerable and exposed communities to training through the Sierra Leone Red Cross Community Disaster Preparedness project. In conjunction with Red Cross efforts, develop locally-managed community emergency response teams (CERT).

2

Communications Capacity

The density, diversity, resilience, and quality of communications infrastructure influence how district- and local-level populations able to facilitate effective and coordinated communication.

Pursue public-private partnerships to increase availability of affordable mobile communications and sustainable power supply.

Incentivize expansion of the existing cellular network by increasing the consumer base for mobile communications.

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**1305 N Holopono Street
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ndpba.sle@pdc.org



SIERRA LEONE

PUJEHUN

NDPBA DISTRICT PROFILE

SIERRA LEONE PUJEHUN

CAPITAL: PUJEHUN

Area: 4,105 km²

Pujehun District is in the Southern Province and borders the Atlantic Ocean in the southwest, the Republic of Liberia to the southeast, Kenema district to the northeast, Bo district to the north and Bonthe district to the west. The town of Pujehun is the capital of the district. The population is predominantly Muslim mainly belonging to the Mende ethnic group. Pujehun has significant natural resource potentials; it has high river navigation potentials – with the Wanjei, Moa and Mano Rivers linked to the Atlantic Ocean on one end and to several tributaries that are navigable to several villages and tourism destinations in Sierra Leone and Liberia with large stretches of naturally beautiful beaches. The Gola Forest National Park which is a significant biodiversity hotspot stretches across Makpele and Soro Gbema Chiefdoms. Tiwai Island in Barri Chiefdom is a fantastic tourist attraction with wide ranging biodiversity. Diamond mining is a major economic activity in the district, as well as agricultural production of cassava, coffee, and cacao.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - Moderate

Score: 0.490 • Rank: 7/14



RESILIENCE (R) - Low

Score: 0.385 • Rank: 11/14



MULTI-HAZARD EXPOSURE (MHE) - Low

Score: 0.240 • Rank: 10/14



VULNERABILITY (V) - High

Score: 0.584 • Rank: 3/14



COPING CAPACITY (CC) - Very Low

Score: 0.454 • Rank: 7/14



Population (2015)

346,461



Infant Mortality Rate

80



Illiterate population

57.7%



Access to improved water

70.5%



Average life expectancy

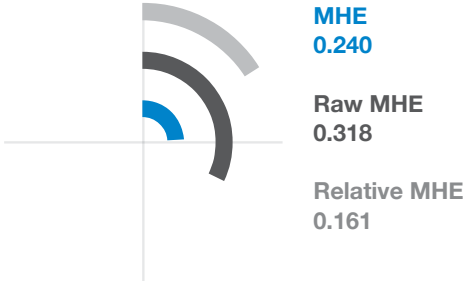
49.4 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>





MULTI-HAZARD EXPOSURE (MHE)


RANK: 10 / 14 DISTRICTS
SCORE: 0.240




ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:

 Inland Flood
4.7%
👤 16,735

 Coastal Flood
1.0%
👤 3,532

 Landslide
52.0%
👤 184,472

 Drought
0.0%
👤 0

 Wildfire
5.1%
👤 18,161



VULNERABILITY (V)

RANK: 3 / 14 DISTRICTS ASSESSED
SCORE: 0.584

Vulnerability in Pujehun is primarily driven by Information Access Vulnerability and Economic Constraints. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 11/14 Districts Assessed

1.9% Average Annual Forest Loss	21.92 Livestock Density (per sq km)	6.3% Erosion Potential	0.23 Ecological Change	50.3% Area Affected by Mining
---	---	----------------------------------	----------------------------------	---



Vulnerable Health Status

Rank: 4/14 Districts Assessed

49.4 Life Expectancy (years)	80 Infant Mortality Rate (per 1,000 live births)	156 Maternal Mortality Ratio	7.2% Acute Malnutrition (Children <5)	4.3% Population with Disability	86.2 Tuberculosis Incidence (per 100,000 persons)	46.8% Malaria Prevalance (per 100,000 persons)	0.8% HIV Prevalance (per 100,000 persons)
--	--	--	---	---	---	--	---



Clean Water Vulnerability

Rank: 8/14 Districts Assessed

70.5% Households with Improved Water Source	30.6% Households with Improved Sanitation	66.4% Population at High Risk of Fecal Contamination	14.4% Water Source > 30 minutes from Home
---	---	--	---



Information Access Vulnerability

Rank: 2/14 Districts Assessed

57.7% Illiteracy Rate (Age 10+)	73.2% Primary School Attendance Ratio	3.7% Upper Secondary Completion Rate	6.2% Households with Internet	0.4% Households with Television	44.1% Households with Internet
---	---	--	---	---	--



Economic Constraints

Rank: 5/14 Districts Assessed

80.55 Economic Dependency Ratio	3.8% Population in Poorest Wealth Quintile	0.25 Income Inequality (GINI)	19.9% Child Labor Participation (Age 10-14)
---	--	---	---



Gender Inequality

Rank: 5/14 Districts Assessed

0.89 Female to Male Land Ownership*	1.12 Female to Male Home Ownership*	0.88 Female to Male Labor Participation*	0.45 Female to Male Secondary Education*	0.0% Female Seats in Local Council
---	---	--	--	--

*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 5/14 Districts Assessed

3.8% Average Annual Population Change	2.5% Average Annual Urban Population Change	7.5 Net Migration Rate	40.7% Population that is Food Insecure	39.2% Ratio of Youth (15-24) to Adult (15+)
---	---	----------------------------------	--	---



COPING CAPACITY (CC)

RANK: 7 / 14 DISTRICTS ASSESSED
SCORE: 0.454

Pujehun exhibits weaker Coping Capacity in the areas of Energy Capacity and Emergency Service Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity



Rank: 13/14 Districts Assessed

9.9%

Households with Bank Account

94.9%

Income per Capita

1.4%

Population in Highest Wealth Quintile

0.83

Financial Institutions per 100k Persons



Governance



Rank: 8/14 Districts Assessed

1.44

Conflict Events per 100k Persons

79.6%

Voter Participation



Environmental Capacity



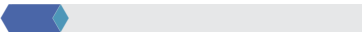
Rank: 6/14 Districts Assessed

6.3%

Protected Area



Infrastructure Capacity



Rank: 13/14 Districts Assessed



Health Care Capacity Rank: 9/14 Districts Assessed

9

Hopital Beds per 10,000 People

0.11

Physicians per 10,000 People

1.39

Nurses per 10,000 People

15.3

Average Distance to Nearest Hospital (km²)

92.1%

Vaccination Coverage



Transportation Capacity Rank: 14/14 Districts Assessed

0.42

Road Density (km per sq. km)

67.7

Distance to Airport or Seaport (km)



Communications Capacity Rank: 11/14 Districts Assessed

58.7%

Households with Mobile Phone

6.29

Cellular Towers per 100k Persons



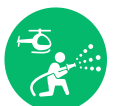
Energy Capacity Rank: 14/14 Districts Assessed

0.1%

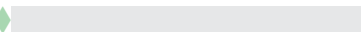
Households Connected to Electric Grid

0

Fuel Stations per 100k Persons



Emergency Service Capacity



Rank: 10/14 Districts Assessed

0

Firefighters per 100k Persons

0

Search and Rescue Teams per 100k Persons

0

Fire Vehicles per 100k Persons



RESILIENCE (R)

RANK: 11 / 14 DISTRICTS
SCORE: 0.385

Pujehun's score and ranking are due to High Vulnerability combined with Very Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Information
Access
Vulnerability**



**Economic
Constraints**



Energy Capacity



**Emergency Service
Capacity**



HAZARD-SPECIFIC RISK



Coastal Flood



SCORE: 0.36/14
RANK: 3



Inland Flood



SCORE: 0.11
RANK: 11



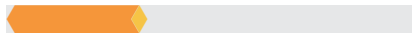
Drought



SCORE: 0.00/14
RANK: 7



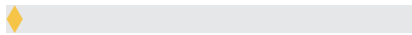
Landslide



SCORE: 0.36/14
RANK: 1



Wildfire



SCORE: 0.00/14
RANK: 14



MULTI-HAZARD RISK (MHR)

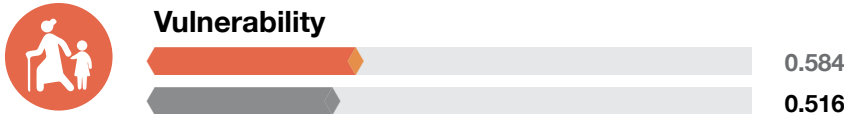
7 / 14

Rank within districts
Score: 0.490



Pujehun’s score and ranking are due to Low Multi-hazard exposure combined with High Vulnerability and Very Low Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



District score
Country score

PUJEHUN RECOMMENDATIONS

1

Information Access Vulnerability

Limitations in information access can impede a population’s ability to receive, understand, and take action. Emergency messages must take into account the unique information access constraints of the district. Emergency messages presented to the population of Pujehun District must contain clear and simple information to ensure an appropriate response to save lives and reduce losses.

Focus interventions on building literacy standards at the primary level, and on reducing school dropout rates. Ensure that the district has the schools and human resources to support education through the secondary level.

Encourage whole-of-community education to ensure support for education outside of the classroom, including volunteerism, school-to-work programs, and community-based learning projects.

Pujehun district is exposed to landslide, wildfire, inland, and coastal flood hazards. Invest in information technology (internet, television, radio) and associated sustainable energy programs to support multimodal communications and learning environments in the district. Ensuring access to information during normal operations increases the capacity receive, comprehend, and act on critical information and disaster warnings.

2

Economic Constraints

Economic constraints have individual, household, community, and district-wide influence. Limitations on available financial resources reduce opportunities to invest in mitigation and preparedness measures and limit Pujehun District’s ability to facilitate short- and long-term recovery.

Reduce income inequality by encouraging programs that support small business opportunities to diversify livelihoods (beyond agriculture and extractive industry) and generate prospects for equitable distribution of property and economic assets in the district.

Economic constraints in Pujehun are closely linked to Information Access Vulnerability and vice versa. Removing economic barriers to education, and ensuring equitable access to schools, educational resources, and information technology will reduce vulnerability in the District.

PUJEHUN RECOMMENDATIONS

1

Energy Capacity

Homes, businesses, industry, and government all rely on access to energy resources for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability and quantity of energy reserves in Pujehun will contribute to economic development and increase the speed of recovery processes in the aftermath of a disaster.

Tied with the rural districts of Kambia and Koinadugu, Pujehun district has the lowest access to electricity in Sierra Leone, with just 0.1% of homes connected to the electrical grid. Focus development programs on increasing energy capacity by establishing sustainable power generation within the district and extending the existing transmission and distribution network.

Incentivize construction of gas stations and fuel storage infrastructure to increase fuel capacity and availability.

2

Emergency Service Capacity

Societies establish capacities to manage emergencies that scale from day-to-day events up to catastrophes that impact all of society. Establishing and maintaining a broad range of systems and resources to support emergency services in Pujehun will increase the capacity for disaster management and response.

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SIERRA LEONE

TONKOLILI

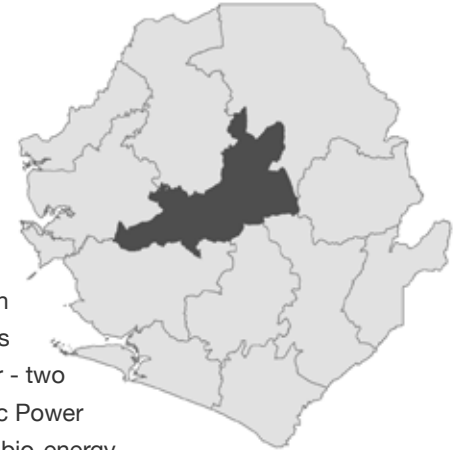
NDPBA DISTRICT PROFILE

SIERRA LEONE TONKOLILI

CAPITAL: MAGBURAKA

Area: 7,003 km²

Tonkolili District lies at the centermost part of Sierra Leone, sharing boundaries with seven other districts. Tonkolili is strategically located in the center of Sierra Leone and the land is well drained by the Rokel River, the longest in Sierra Leone, and the Pampana - Taia River - two of the main rivers in the country. The Bumbuna waterfalls and main national Hydro Electric Power lie on the Rokel River. Agriculture also plays a significant role in the economy. The largest bio-energy company in Africa, Addax Petroleum, is found in the district. There is also a significant agricultural activity at the Magbass sugar production facility. Economically, there is significant potential for an extractive economy. Tonkolili is the site of iron ore mine, including a railway between the mine and Port Pepel.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - High

Score: 0.574 • Rank: 4/14



RESILIENCE (R) - Very Low

Score: 0.349 • Rank: 13/14



MULTI-HAZARD EXPOSURE (MHE) - Moderate

Score: 0.422 • Rank: 7/14



VULNERABILITY (V) - Very High

Score: 0.715 • Rank: 1/14



COPING CAPACITY (CC) - Moderate

Score: 0.354 • Rank: 12/14



Population (2015)

531,435



Infant Mortality Rate

36



Illiterate population

60.0%



Access to improved water

35.3%



Average life expectancy

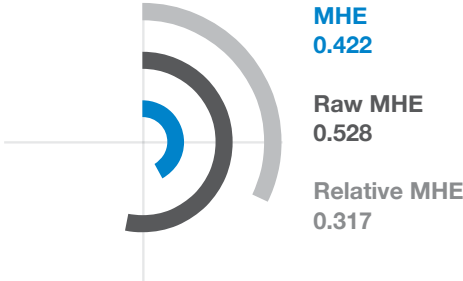
51 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>




MULTI-HAZARD EXPOSURE (MHE)


RANK: 7 / 14 DISTRICTS
SCORE: 0.422




ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:




Inland Flood
3.7%
16,819



Coastal Flood
0.0%
0



Landslide
45.0%
205,378



Drought
1.0%
4,644



Wildfire
41.0%
187,218



VULNERABILITY (V)

RANK: 1 / 14 DISTRICTS ASSESSED
SCORE: 0.715

Vulnerability in Tonkolili is primarily driven by Clean Water Access Vulnerability and Information Access Vulnerability. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 1/14 Districts Assessed

2.0% Average Annual Forest Loss	6.7 Livestock Density (per sq km)	50.1% Erosion Potential	-0.12 Ecological Change	27.3% Area Affected by Mining
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Vulnerable Health Status

Rank: 6/14 Districts Assessed

51 Life Expectancy (years)	36 Infant Mortality Rate (per 1,000 live births)	355 Maternal Mortality Ratio	3.1% Acute Malnutrition (Children <5)	8.2% Population with Disability	204.9 Tuberculosis Incidence (per 100,000 persons)	55.7% Malaria Prevalance (per 100,000 persons)	0.7% HIV Prevalance (per 100,000 persons)
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Clean Water Vulnerability

Rank: 1/14 Districts Assessed

35.3% Households with Improved Water Source	22.2% Households with Improved Sanitation	96.1% Population at High Risk of Fecal Contamination	16.4% Water Source > 30 minutes from Home
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Information Access Vulnerability

Rank: 1/14 Districts Assessed

60.0% Illiteracy Rate (Age 10+)	79.4% Primary School Attendance Ratio	7.8% Upper Secondary Completion Rate	3.2% Households with Internet	0.9% Households with Television	37.6% Households with Internet
---	---	--	---	---	--



Economic Constraints

Rank: 3/14 Districts Assessed

84.35 Economic Dependency Ratio	4.7% Population in Poorest Wealth Quintile	0.24 Income Inequality (GINI)	26.0% Child Labor Participation (Age 10-14)
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Gender Inequality

Rank: 6/14 Districts Assessed

0.58 Female to Male Land Ownership*	0.58 Female to Male Home Ownership*	0.97 Female to Male Labor Participation*	1.26 Female to Male Secondary Education*	6.9% Female Seats in Local Council
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*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 2/14 Districts Assessed

3.9% Average Annual Population Change	8.9% Average Annual Urban Population Change	16.21 Net Migration Rate	62.7% Population that is Food Insecure	36.5% Ratio of Youth (15-24) to Adult (15+)
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COPING CAPACITY (CC)

RANK: 12 / 14 DISTRICTS ASSESSED
SCORE: 0.354

Tonkolili exhibits weaker Coping Capacity in the areas of Emergency Service Capacity and Communications Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity

Rank: 14/14 Districts Assessed

3.8% Households with Bank Account	97.2% Income per Capita	1.3% Population in Highest Wealth Quintile	1.2 Financial Institutions per 100k Persons
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Governance

Rank: 1/14 Districts Assessed

0.38 Conflict Events per 100k Persons	82.3% Voter Participation
---	-------------------------------------



Environmental Capacity

Rank: 9/14 Districts Assessed

2.6% Protected Area



Infrastructure Capacity

Rank: 14/14 Districts Assessed



Health Care Capacity **Rank: 12/14 Districts Assessed**

14 Hospital Beds per 10,000 People	0.17 Physicians per 10,000 People	1.89 Nurses per 10,000 People	24.72 Average Distance to Nearest Hospital (km ²)	58.1% Vaccination Coverage
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Transportation Capacity **Rank: 13/14 Districts Assessed**

0.55 Road Density (km per sq. km)	71.12 Distance to Airport or Seaport (km)
---	---



Communications Capacity **Rank: 14/14 Districts Assessed**

48.1% Households with Mobile Phone	6.75 Cellular Towers per 100k Persons
--	---



Energy Capacity **Rank: 10/14 Districts Assessed**

2.8% Households Connected to Electric Grid	0.16 Fuel Stations per 100k Persons
--	---



Emergency Service Capacity

Rank: 10/14 Districts Assessed

0 Firefighters per 100k Persons	0 Search and Rescue Teams per 100k Persons	0 Fire Vehicles per 100k Persons
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RESILIENCE (R)

RANK: 13 / 14 DISTRICTS
SCORE: 0.349

Tonkolili's score and ranking are due to Very High Vulnerability combined with Moderate Coping Capacity scores.

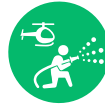
Below are the four thematic areas with the weakest relative scores:



**Clean Water
Access
Vulnerability**



**Information
Access
Vulnerability**



**Emergency Service
Capacity**



**Communications
Capacity**



HAZARD-SPECIFIC RISK



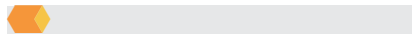
Coastal Flood



SCORE: 0.00/14
RANK: 8



Inland Flood



SCORE: 0.08
RANK: 13



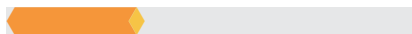
Drought



SCORE: 0.26/14
RANK: 4



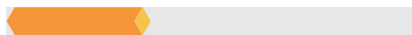
Landslide



SCORE: 0.35/14
RANK: 2



Wildfire



SCORE: 0.37/14
RANK: 2



MULTI-HAZARD RISK (MHR)

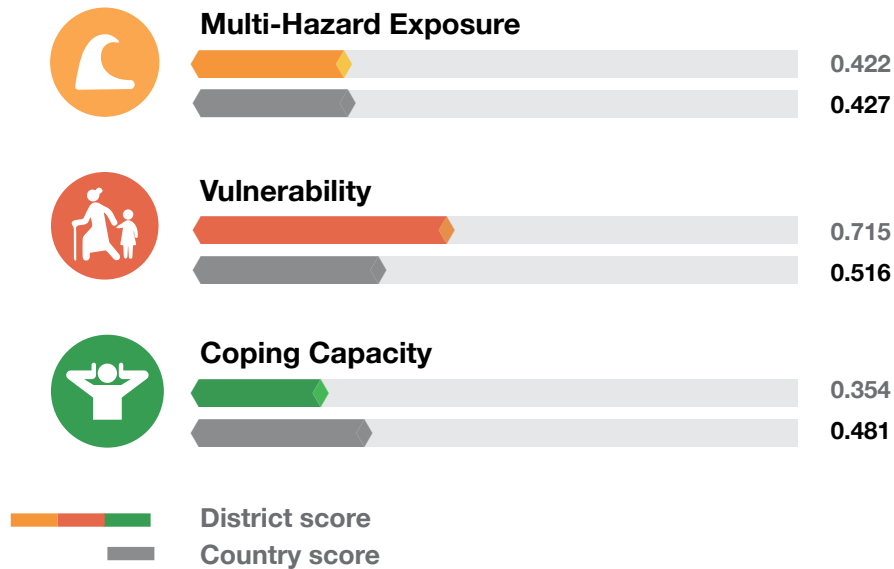
4 / 14

Rank within districts
Score: 0.574



Tonkolili's score and ranking are due to Moderate Multi-hazard exposure combined with Very High Vulnerability and Moderate Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



TONKOLILI RECOMMENDATIONS

1

Clean Water Access Vulnerability

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation in Tonkolili improves health outcomes and frees up resources to decrease further susceptibility to impacts.

Tonkolili district ranks highest in the country in clean water vulnerability, with just 35% of households having access to improved water, and 22% with improved sanitation. Findings show very high risk of E. Coli contamination in drinking water, and increased burden for water collection. Invest in improved water and sanitation infrastructure to increase access and reduce exposure to disease.

2

Information Access Vulnerability

Limitations in information access can impede a population's ability to receive, understand, and take action. Emergency messages must take into account the unique information access constraints of the district. Emergency messages presented to the population of Tonkolili must contain clear and simple information to ensure an appropriate response to save lives and reduce losses.

Tonkolili district ranks highest in the country in access to information vulnerability, with 60% of the population unable to read and write. Combined with a very low completion rate for secondary education, and major limitations in access to information technology (internet, television, radio).

Focus interventions on building literacy standards at the primary level, and on reducing school dropout rates. Ensure that the district has the schools and human resources to support education through the secondary level. Encourage whole-of-community education to ensure support for education outside of the classroom, including volunteerism, school-to-work programs, and community-based learning projects.

Tonkolili district is exposed to landslides, wildfire, flood, and drought hazards. Invest in information technology (internet, television, radio) and associated sustainable energy programs to support multimodal communications and learning environments in the district. Ensuring access to information during normal operations increases the capacity receive, comprehend, and act on critical information and disaster warnings.

TONKOLILI RECOMMENDATIONS

1

Emergency Service Capacity

Societies establish capacities to manage emergencies that scale from day-to-day events up to catastrophes that impact all of society. Establishing and maintaining a broad range of systems and resources to support emergency services in Tonkolili will increase the capacity for disaster management and response.

Tonkolili district participated in the Sierra Leone Red Cross Community Disaster Preparedness program, including training, and plan and exercise development. Continue building community and volunteer fire and emergency response corps. In conjunction with Red Cross efforts, develop locally-managed community emergency response teams (CERT).

In conjunction with Red Cross efforts, develop locally-managed community emergency response teams (CERT). Identify government or external resources to conduct emergency services training and conduct district-level exercises on a regular basis.

2

Communications Capacity

The density, diversity, resilience, and quality of communications infrastructure influence how district- and local-level populations able to facilitate effective and coordinated communication.

Pursue public-private partnerships to increase availability of affordable mobile communications and sustainable power supply.

Incentivize expansion of the existing cellular network by increasing the consumer base for mobile communications.

**Better solutions.
Fewer disasters.**

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ndpba.sle@pdc.org



SIERRA LEONE

WESTERN AREA RURAL

NDPBA DISTRICT PROFILE

SIERRA LEONE

WESTERN AREA RURAL

CAPITAL: WATERLOO

Area: 544 km²

Western Area Rural District is in the western horn of Sierra Leone, occupying the entire Freetown Peninsula outside the city boundaries. It borders the country's capital Freetown to the east and west; Port Loko District to the north; and the Atlantic Ocean to the south and east. The district capital and largest city is Waterloo which is home to many different ethnic groups, including a significant population of the Krio and Sherbro people. The Freetown peninsula is the star attraction of Sierra Leone's tourist industry consisting of three roughly parallel ranges of highlands that are narrow but extend about 30 km south of Freetown. The hills and mountains in the highlands rise from 200m to 1000m above the low-lying narrow coastal area with a stretch of beaches along the Peninsula. Rural-urban fringe activities like mixed cropping and market gardening, quarrying and sand mining on the beaches, animal rearing, fishing, small-scale manufacturing, tourism, services and other trades can be found within the district.



RISK AND VULNERABILITY

COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - Very Low

Score: 0.409 • Rank: 12/14



RESILIENCE (R) - High

Score: 0.629 • Rank: 3/14



MULTI-HAZARD EXPOSURE (MHE) - Moderate

Score: 0.485 • Rank: 6/14



VULNERABILITY (V) - Very Low

Score: 0.427 • Rank: 12/14



COPING CAPACITY (CC) - Very High

Score: 0.685 • Rank: 1/14



Population (2015)

444,270



Infant Mortality Rate

60



Illiterate population

33.8%



Access to improved water

71.9%



Average life expectancy

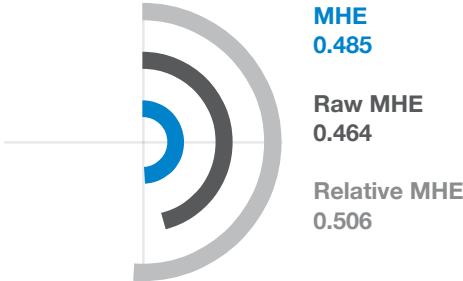
44.9 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>




MULTI-HAZARD EXPOSURE (MHE)


RANK: 6 / 14 DISTRICTS
SCORE: 0.485




ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:




Inland Flood
30.0%
82,602



Coastal Flood
0.9%
2,369



Landslide
74.2%
204,547



Drought
0.0%
0



Wildfire
19.4%
53,491



VULNERABILITY (V)

RANK: 12 / 14 DISTRICTS ASSESSED
SCORE: 0.427

Vulnerability in Western Area Rural is primarily driven by Gender Inequality and Population Pressures. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 7/14 Districts Assessed

0.7%	22.29	29.4%	-0.04	5.8%
Average Annual Forest Loss	Livestock Density (per sq km)	Erosion Potential	Ecological Change	Area Affected by Mining



Vulnerable Health Status

Rank: 5/14 Districts Assessed

44.9	60	542	0.0%	3.0%	318.3	34.9%	3.4%
Life Expectancy (years)	Infant Mortality Rate (per 1,000 live births)	Maternal Mortality Ratio	Acute Malnutrition (Children <5)	Population with Disability	Tuberculosis Incidence (per 100,000 persons)	Malaria Prevalance (per 100,000 persons)	HIV Prevalance (per 100,000 persons)



Clean Water Vulnerability

Rank: 11/14 Districts Assessed

71.9%	59.5%	67.1%	14.6%
Households with Improved Water Source	Households with Improved Sanitation	Population at High Risk of Fecal Contamination	Water Source > 30 minutes from Home



Information Access Vulnerability

Rank: 13/14 Districts Assessed

33.8%	88.5%	27.8%	25.2%	13.7%	65.8%
Illiteracy Rate (Age 10+)	Primary School Attendance Ratio	Upper Secondary Completion Rate	Households with Internet	Households with Television	Households with Internet



Economic Constraints

Rank: 13/14 Districts Assessed

74.04	3.1%	0.23	6.5%
Economic Dependency Ratio	Population in Poorest Wealth Quintile	Income Inequality (GINI)	Child Labor Participation (Age 10-14)



Gender Inequality

Rank: 1/14 Districts Assessed

0.4	0.44	0.83	0.93	11.1%
Female to Male Land Ownership*	Female to Male Home Ownership*	Female to Male Labor Participation*	Female to Male Secondary Education*	Female Seats in Local Council

*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 4/14 Districts Assessed

8.5%	37.2%	372.82	26.9%	33.9%
Average Annual Population Change	Average Annual Urban Population Change	Net Migration Rate	Population that is Food Insecure	Ratio of Youth (15-24) to Adult (15+)



COPING CAPACITY (CC)

RANK: 1 / 14 DISTRICTS ASSESSED
SCORE: 0.685

Western Area Rural exhibits weaker Coping Capacity in the areas of Health Care Capacity and Energy Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity



Rank: 5/14 Districts Assessed

26.5%

Households with Bank Account

91.1%

Income per Capita

25.3%

Population in Highest Wealth Quintile

2.47

Financial Institutions per 100k Persons



Governance



Rank: 7/14 Districts Assessed

1.35

Conflict Events per 100k Persons

79.6%

Voter Participation



Environmental Capacity



Rank: 1/14 Districts Assessed

30.4%

Protected Area



Infrastructure Capacity



Rank: 2/14 Districts Assessed



Health Care Capacity Rank: 7/14 Districts Assessed

4

Hospital Beds per 10,000 People

1.1

Physicians per 10,000 People

3.53

Nurses per 10,000 People

3.05

Average Distance to Nearest Hospital (km²)

59.0%

Vaccination Coverage



Transportation Capacity Rank: 2/14 Districts Assessed

2.34

Road Density (km per sq. km)

9.23

Distance to Airport or Seaport (km)



Communications Capacity Rank: 2/14 Districts Assessed

91.6%

Households with Mobile Phone

15.32

Cellular Towers per 100k Persons



Energy Capacity Rank: 4/14 Districts Assessed

13.8%

Households Connected to Electric Grid

1.18

Fuel Stations per 100k Persons



Emergency Service Capacity



Rank: 2/14 Districts Assessed

5.4

Firefighters per 100k Persons

1.58

Search and Rescue Teams per 100k Persons

0.23

Fire Vehicles per 100k Persons



RESILIENCE (R)

RANK: 3 / 14 DISTRICTS
SCORE: 0.629

Western Area Rural's score and ranking are due to Very Low Vulnerability combined with Very High Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Gender Inequality



Population Pressures



Health Care Capacity



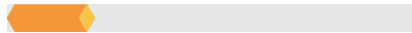
Energy Capacity



HAZARD-SPECIFIC RISK



Coastal Flood



SCORE: 0.21/14
RANK: 7



Inland Flood



SCORE: 0.30
RANK: 2



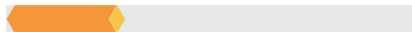
Drought



SCORE: 0.00/14
RANK: 7



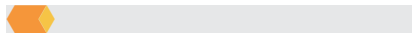
Landslide



SCORE: 0.30/14
RANK: 3



Wildfire



SCORE: 0.09/14
RANK: 10



MULTI-HAZARD RISK (MHR)

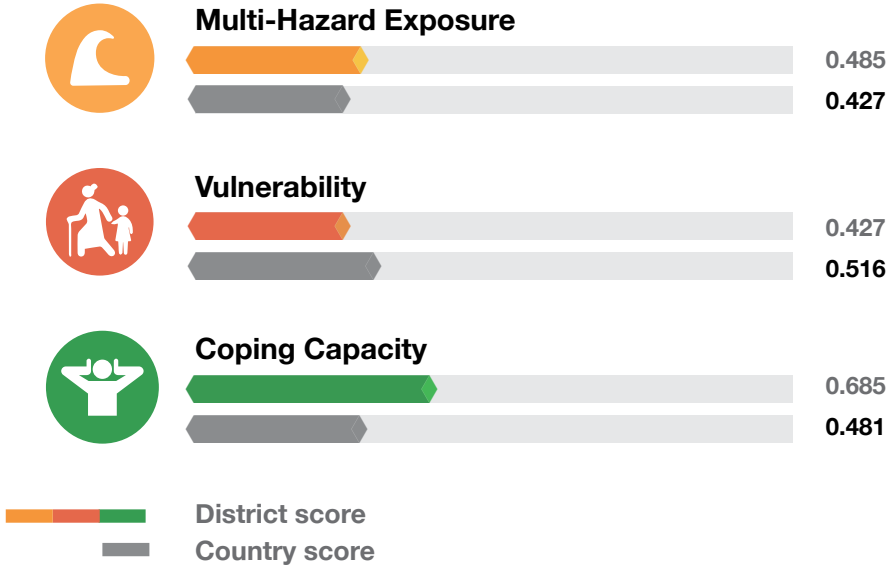
12 / 14

Rank within districts
Score: 0.409



Western Area Rural’s score and ranking are due to Moderate Multi-hazard exposure combined with Very Low Vulnerability and Very High Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



WESTERN AREA RURAL RECOMMENDATIONS

1

Gender Inequality

Marginalized populations are less likely to have their needs met under pre-disaster conditions, and therefore become even more susceptible to harm during times of disaster. Increase gender-based inclusion in all phases of DM, ensuring the implementation at the district and local levels. Course of action must recognize the role of women in society and support changes to policies and programs to promote gender-equal access.

Focus efforts to support equal labor participation by diversifying economic opportunities for women in the district.

Encourage women to participate in the planning and decision-making process through inclusion in the district disaster management committee and representation in local council.

2

Population Pressures

Rapid changes in population size and distribution can alter population vulnerability characteristics presenting planning challenges and destabilizing social, economic, and environmental systems. Increased population pressures require disaster managers to realign needs, institutional structures, and available resources to support delivery of basic resources before, during, and after an event.

Western Area Rural saw the largest net migration of any district between 2004 and 2015, with average annual total population growth at 8.5% and urban population growth of 37%.

With rapid population growth and urbanization, closely monitor population changes and implement security measures and development plans to anticipate pressures on district resources and infrastructure that could give way to instability or put undue stress on the environment.

Western Area Rural is highly exposed to landslides and inland flooding, as evidenced by the 2017 Sugarloaf Landslide disaster. Wildfires and coastal flood represent additional hazards of concern. Extreme population pressures compound this exposure by giving rise to informal development. Establish multi-hazard preparedness and response planning at the district level and perform regular updates to plans and SOPs to account for increases in population.

WESTERN AREA RURAL RECOMMENDATIONS

1

Health Care Capacity

Robust access to skilled caregivers and the dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster associated health and medical impacts may be addressed.

Findings show that Western Area Rural has just 4 inpatient hospital beds per 10,000 persons, with low rate of vaccine coverage, scoring 12th of 14 districts in MoHS' 2017 assessment of overall health service readiness.

Focus on increasing inpatient hospital infrastructure and services to ensure service readiness for an increasing population.

Promote community-level vaccination campaigns to improve coverage and reduce of burden of preventable diseases.

2

Energy Capacity

Homes, businesses, industry, and government all rely on access to energy resources for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability and quantity of energy reserves in Western Area Rural will contribute to economic development and increase the speed of recovery processes in the aftermath of a disaster.

Just 14% of homes in Western Area Rural are connected to the electrical grid, compared to 74% in neighboring Western Area Urban. Focus development programs on increasing and extending the existing transmission and distribution network from the urban area and constructing sustainable power sources in the district.

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SIERRA LEONE

WESTERN AREA URBAN

NDPBA DISTRICT PROFILE

SIERRA LEONE WESTERN AREA URBAN

CAPITAL: FREETOWN

Area: 82 km²

Western Area Urban District is the most populous district in the country and home to a significant population of all of Sierra Leone's ethnic groups. It is located in the Western Area of the country with an area of 82 km². Western Area Urban District is exclusively made up of the city of Freetown which is the capital of Sierra Leone and it is Sierra Leone's major urban, economic, financial, cultural, educational and political center as well as the seat of the country's central government. It is bordered by the Western Rural Area to its south, southeast and east, the Sierra Leone River estuary to the north and northeast and the Atlantic Ocean to the northwest. It is located on a mountainous peninsula, which is approximately 38km long and 16km wide, with topographic relief of over 700m.a.s.l. The peninsula is surrounded by the Atlantic Ocean. Dense forest covers the highest areas whilst many of the lower slopes have been deforested leaving a cover of sparse forest, grasslands and urbanized built-up areas. The city's economy revolves largely around its harbor, which occupies a part of the estuary of the Sierra Leone River in one of the world's largest natural deep-water harbors.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - Moderate

Score: 0.495 • Rank: 6/14



RESILIENCE (R) - Very High

Score: 0.682 • Rank: 1/14



MULTI-HAZARD EXPOSURE (MHE) - Very High

Score: 0.849 • Rank: 2/14



VULNERABILITY (V) - Very Low

Score: 0.312 • Rank: 14/14



COPING CAPACITY (CC) - Very High

Score: 0.677 • Rank: 2/14



Population (2015)

1,055,964



Infant Mortality Rate

83



Illiterate population

22.2%



Access to improved water

71.6%



Average life expectancy

63.2 years

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>




MULTI-HAZARD EXPOSURE (MHE)


RANK: 2 / 14 DISTRICTS
SCORE: 0.849





MHE
0.849
Raw MHE
1
Relative MHE
0.698

ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:

 Inland Flood
27.2%
👤 287,011

 Coastal Flood
6.2%
👤 65,341

 Landslide
63.7%
👤 671,473

 Drought
0.0%
👤 0

 Wildfire
61.6%
👤 649,910



VULNERABILITY (V)

RANK: 14 / 14 DISTRICTS ASSESSED
SCORE: 0.312

Vulnerability in Western Area Urban is primarily driven by Environmental Stress and Vulnerable Health Status. The bar chart indicates the socioeconomic themes contributing to the district's overall Vulnerability score.



Environmental Stress

Rank: 4/14 Districts Assessed

2.1% Average Annual Forest Loss	36.38 Livestock Density (per sq km)	22.7% Erosion Potential	0 Ecological Change	0.0% Area Affected by Mining
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Vulnerable Health Status

Rank: 8/14 Districts Assessed

63.2 Life Expectancy (years)	83 Infant Mortality Rate (per 1,000 live births)	542 Maternal Mortality Ratio	2.6% Acute Malnutrition (Children <5)	2.4% Population with Disability	445.3 Tuberculosis Incidence (per 100,000 persons)	6.3% Malaria Prevalance (per 100,000 persons)	2.5% HIV Prevalance (per 100,000 persons)
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Clean Water Vulnerability

Rank: 12/14 Districts Assessed

71.6% Households with Improved Water Source	81.7% Households with Improved Sanitation	78.6% Population at High Risk of Fecal Contamination	13.8% Water Source > 30 minutes from Home
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Information Access Vulnerability

Rank: 14/14 Districts Assessed

22.2% Illiteracy Rate (Age 10+)	89.9% Primary School Attendance Ratio	39.0% Upper Secondary Completion Rate	27.9% Households with Internet	64.5% Households with Television	65.4% Households with Internet
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Economic Constraints

Rank: 14/14 Districts Assessed

60.4 Economic Dependency Ratio	24.4% Population in Poorest Wealth Quintile	0.09 Income Inequality (GINI)	4.4% Child Labor Participation (Age 10-14)
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Gender Inequality

Rank: 11/14 Districts Assessed

0.67 Female to Male Land Ownership*	0.69 Female to Male Home Ownership*	0.81 Female to Male Labor Participation*	0.98 Female to Male Secondary Education*	41.7% Female Seats in Local Council
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*Values closer to 1 represent greater gender parity.



Population Pressures

Rank: 10/14 Districts Assessed

2.8% Average Annual Population Change	3.3% Average Annual Urban Population Change	91.75 Net Migration Rate	25.5% Population that is Food Insecure	33.2% Ratio of Youth (15-24) to Adult (15+)
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COPING CAPACITY (CC)

RANK: 2 / 14 DISTRICTS ASSESSED
SCORE: 0.677

Western Area Urban exhibits weaker Coping Capacity in the areas of Governance and Economic Capacity. The bar chart indicates the socioeconomic themes contributing to the district's overall Coping Capacity score.



Economic Capacity



Rank: 3/14 Districts Assessed

41.2%

Households with Bank Account

90.0%

Income per Capita

75.5%

Population in Highest Wealth Quintile

3.96

Financial Institutions per 100k Persons



Governance



Rank: 11/14 Districts Assessed

7.86

Conflict Events per 100k Persons

86.2%

Voter Participation



Environmental Capacity



Rank: 8/14 Districts Assessed

5.0%

Protected Area



Infrastructure Capacity



Rank: 1/14 Districts Assessed



Health Care Capacity

Rank: 1/14 Districts Assessed

11

Hopital Beds per 10,000 People

1.21

Physicians per 10,000 People

10.61

Nurses per 10,000 People

0.76

Average Distance to Nearest Hospital (km²)

69.3%

Vaccination Coverage



Transportation Capacity

Rank: 1/14 Districts Assessed

10.36

Road Density (km per sq. km)

5.09

Distance to Airport or Seaport (km)



Communications Capacity

Rank: 1/14 Districts Assessed

96.9%

Households with Mobile Phone

15.25

Cellular Towers per 100k Persons



Energy Capacity

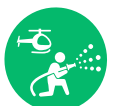
Rank: 1/14 Districts Assessed

74.2%

Households Connected to Electric Grid

2.67

Fuel Stations per 100k Persons



Emergency Service Capacity



Rank: 1/14 Districts Assessed

18.28

Firefighters per 100k Persons

1.99

Search and Rescue Teams per 100k Persons

1.04

Fire Vehicles per 100k Persons



RESILIENCE (R)

RANK: 1 / 14 DISTRICTS
SCORE: 0.682

Western Area Urban's score and ranking are due to Very Low Vulnerability combined with Very High Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Environmental Stress



Vulnerable Health Status



Governance



Economic Capacity



HAZARD-SPECIFIC RISK



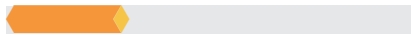
Coastal Flood



SCORE: 0.29/14
RANK: 5



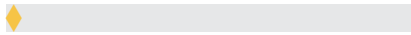
Inland Flood



SCORE: 0.31
RANK: 1



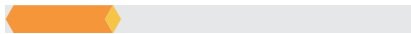
Drought



SCORE: 0.00/14
RANK: 7



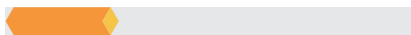
Landslide



SCORE: 0.29/14
RANK: 4



Wildfire



SCORE: 0.28/14
RANK: 5



MULTI-HAZARD RISK (MHR)

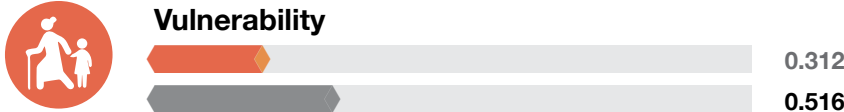
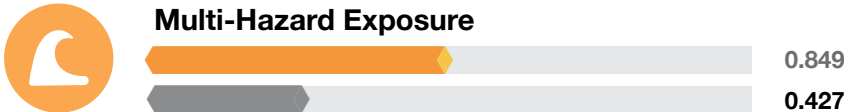
6 / 14

Rank within districts
Score: 0.495



Western Area Urban’s score and ranking are due to Very High Multi-hazard exposure combined with Very Low Vulnerability and Very High Coping Capacity scores.

Multi-hazard risk component scores compared to overall average country scores:



District score
Country score

WESTERN AREA URBAN RECOMMENDATIONS

1

Environmental Stress

Environmental stressors such as the depletion, degradation, or contamination of natural resources can exacerbate natural hazards and negatively impact the health, safety, and economic security of Western Area Urban's population.

Findings show that Western Area Urban experienced the highest average annual deforestation rate between 2010 and 2018. Coupled with livestock density and urban development practices in the densely populated district, this increases environmental stress. Focus on protecting environmental resources from degradation, deforestation, and pressures from urban expansion, which increase the potential for hazards in this highly exposed area. Like Western Area Rural, the urban area is highly vulnerable to landslides and inland flooding, as evidenced by the 2017 Sugarloaf Landslide and 2019 Freetown Floods.

Invest in sustainable urban planning, including housing development, environmental protection, waste disposal, and wastewater management to prevent and reduce environmental stressors that contribute to major disasters.

2

Vulnerable Health Status

A population with a compromised health status will have a greatly reduced ability to manage short- and long-term disaster outcomes. Improving health is often correlated with decreased susceptibility to injury, disease, and stress associated with disasters. Acute or prolonged vulnerable health status limits the basic capacity of response functions.

Overcrowding is a major factor in the transmission of communicable diseases. Continue active health surveillance to prevent the spread of disease and increase availability of skilled health care.

Increase medical stockpiles in anticipation of medical surge related to natural and public health disasters.

Focus on attracting additional resources to support maternal and infant health care and engage adolescents on the risks of early pregnancy, increasing knowledge and access to health services and thereby reducing the risk of maternal and infant mortality.

WESTERN AREA URBAN RECOMMENDATIONS

1

Governance

Instability of institutional structures can make a district more susceptible to the negative effects of a disaster event. Increasing stability in Western Area Urban increases the likelihood that emergencies can be better managed at the local level and supports a quick return to normal functions.

Conflict tends to increase poverty levels and undermine coping capacities by diverting attention away from disaster management. The densely populated Western Urban Area experienced the highest rate of conflict in Sierra Leone from 2015 through 2019. Focus on increasing resources for public security to monitor and anticipate conflict and civil unrest before it becomes violent.

Disasters have the tendency to amplify existing conflict over natural resources and equitable service access. Address conflict directly in city disaster management plans and SOPs, encouraging collaboration with city disaster management, law enforcement and military to control cascading incidents.

2

Economic Capacity

A strong economic foundation provides an indication of a district's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Western Area Urban's limited economic capacity correlates to disproportionate disaster impacts.

Though Western Area Urban ranks third in overall Economic Capacity, findings show that the district has the lowest employment rate in Sierra Leone. Given the link between employment and conflict, focus on increasing employment opportunities in the formal sector (i.e. wage earning, tax paying employees) by advocating for school-to-work programs and establishing economic development goals for sustainable job creation in Freetown.

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ndpba.sle@pdc.org