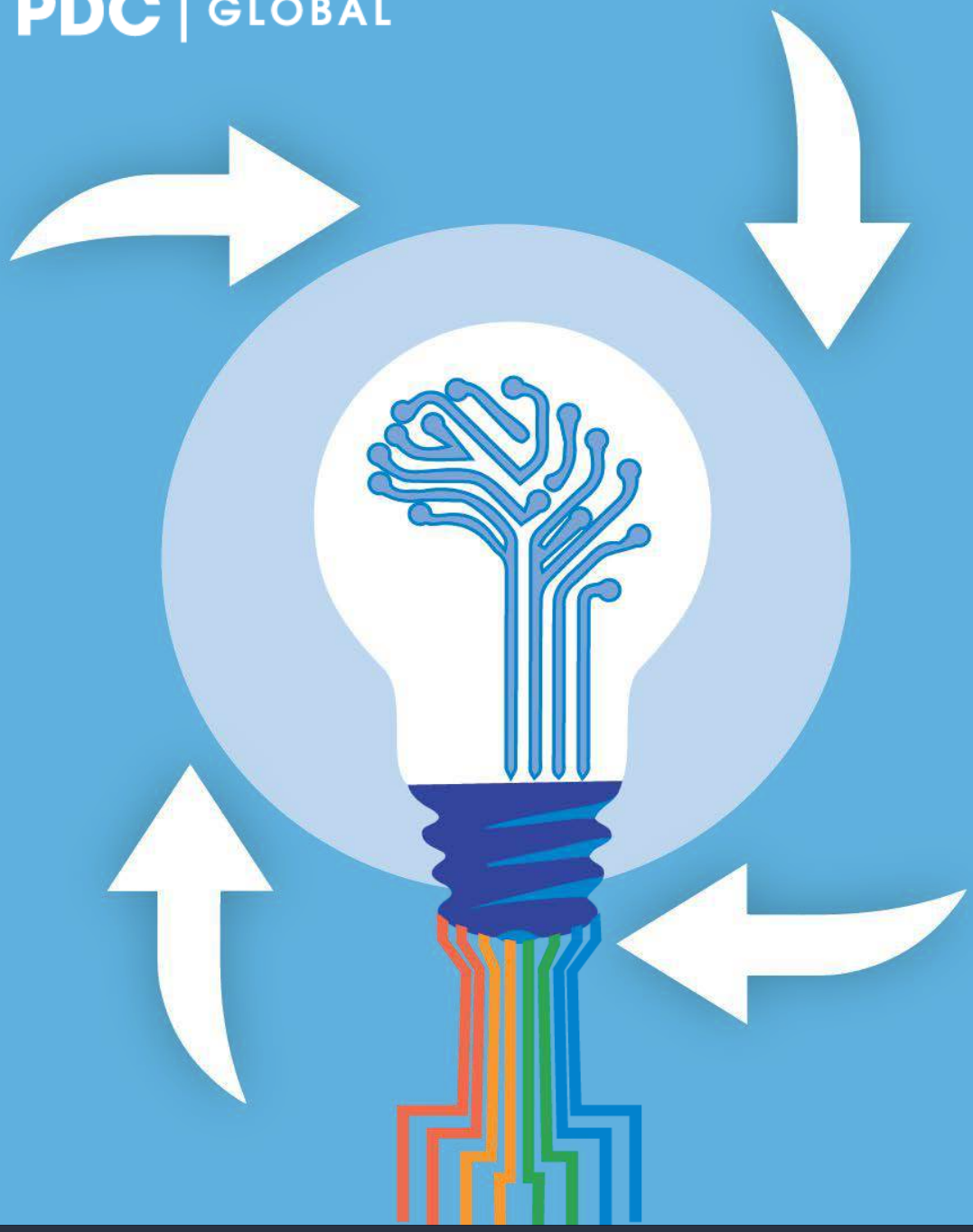
PDC | GLOBAL



DATA SHARING GUIDEBOOK
AND ASSESSMENT METHODOLOGY

National Disaster Preparedness Baseline Assessment (NDPBA)

AN INTRODUCTION TO NDPBA

This guidebook is designed to provide an understanding of the data-sharing process and methodology for the National Disaster Preparedness Baseline Assessment (NDPBA) conducted by Pacific Disaster Center (PDC) in collaboration with local and national stakeholders. The NDPBA includes a Risk and Vulnerability Assessment and a Disaster Management Analysis. All data shared in support of the assessment will be digitized, normalized, analyzed, and provided back to stakeholders at the conclusion of the project. Results and data will also be integrated into PDC's DisasterAWARE platform to ensure that critical information is easy for stakeholders to access, understand, and apply in future decision making.

For the purpose of this assessment, the benefits of data sharing is multifold. First, data sharing provides a holistic understanding of the factors that contribute to disaster risk at the national and subnational level. This helps guide future actions and investments to build resilience and reduce risk. NDPBA data sharing has the secondary benefit of breaking down the compartmentalization of information and encouraging more connection and collaboration between decision makers and organizations involved with disaster management and humanitarian assistance.

Dr. Erin Hughey
PDC Director of Global Operations

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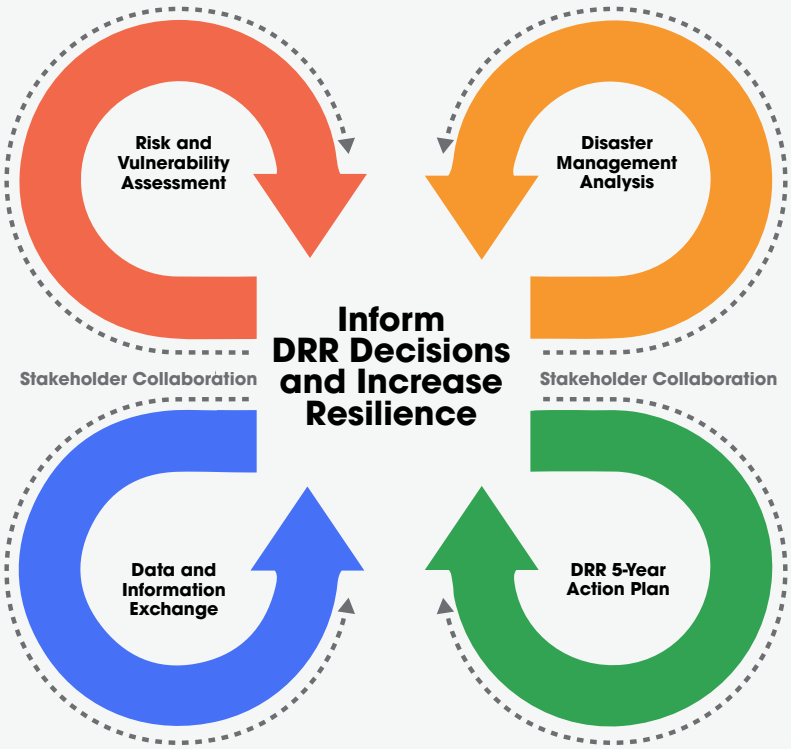
THE NDPBA

NATIONAL DISASTER PREPAREDNESS BASELINE ASSESSMENT

PROCESS OVERVIEW

Our Process at a Glance



Throughout the NDPBA process, governmental and nongovernmental stakeholders from a broad range of sectors work together to complete the assessment—providing unique subject-matter expertise along the way. Using a **collaborative, stakeholder-driven approach**, PDC integrates national priorities and stakeholder feedback throughout every step of the assessment process. This ensures that assessment outcomes are both relevant and accurate.

The NDPBA process includes a **Risk and Vulnerability Assessment (RVA)** which examines several components of risk including exposure to hazards, vulnerability, coping capacity, and existing disaster management capabilities. These findings are further reviewed through the lens of PDC's unique **Disaster Management Analysis (DMA)**. The DMA contextualizes the RVA findings and guides recommendations that are designed to increase resilience and reduce disaster risk.

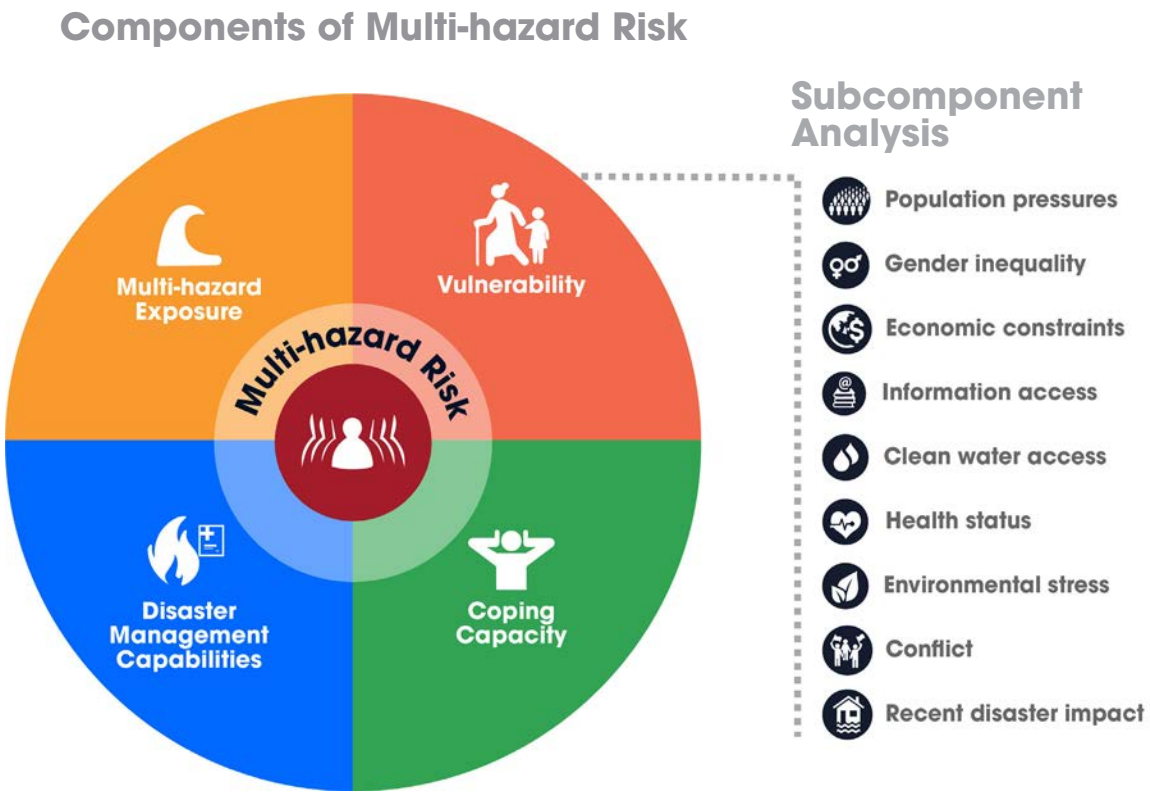
THE RVA

RISK AND VULNERABILITY ASSESSMENT

METHODOLOGY

PDC's Risk and Vulnerability Assessment (RVA) measures the social, cultural, and economic drivers of risk at the national and subnational level—conceptualizing risk as a function of multi-hazard exposure, vulnerability, coping capacity, and disaster management capabilities.

RISK AND VULNERABILITY ASSESSMENT
STANDARD METHODOLOGY



The standard RVA methodology uses a composite index approach to investigate the underlying conditions that lead to increased risk. The assessment combines several components of risk which include multi-hazard exposure, coping capacity, vulnerability, and disaster management capabilities. Individual components are comprised of subcomponents used to assess the status of thematic areas either as a sum or individually. Results help provide a better understanding of the specific socioeconomic and geographic characteristics that predispose an area to the detrimental impacts of a hazard. Because the assessment is designed to be flexible, subcomponent indicators are often tailored to reflect the unique makeup of the country or area being assessed.

OBJECTIVE

To form a foundation for long-term data sharing and monitoring to support disaster risk reduction and to enhance decision making through improved access to temporal and spatial data.

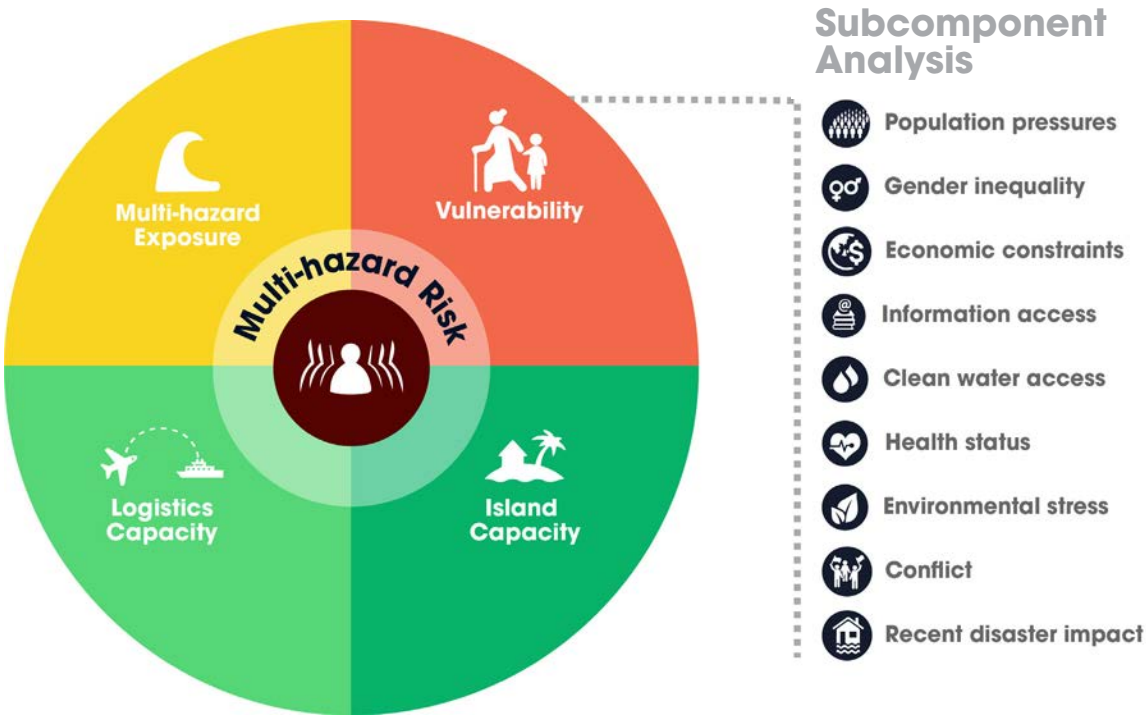
THE RVA

RISK AND VULNERABILITY ASSESSMENT METHODOLOGY

PDC's Risk and Vulnerability Assessment (RVA) measures the social, cultural, and economic drivers of risk at the national and subnational level—conceptualizing risk as a function of multi-hazard exposure, vulnerability, coping capacity, and disaster management capabilities.

RISK AND VULNERABILITY ASSESSMENT
ISLAND METHODOLOGY

Components of Multi-hazard Risk



The island RVA methodology uses a composite index approach to investigate the underlying conditions that lead to increased risk. The assessment combines several components of risk including multi-hazard exposure, vulnerability, island capacity, and logistics capacity. Individual components are comprised of subcomponents used to assess the status of thematic areas either as a sum or individually. Results help provide a better understanding of the specific socioeconomic and geographic characteristics that predispose an area to the detrimental impacts of a hazard. Because the assessment is designed to be flexible, subcomponent indicators are often tailored to reflect the unique makeup of the country or area being assessed.

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THE RVA

RISK AND VULNERABILITY ASSESSMENT

MULTI-HAZARD EXPOSURE DATA SHARING GUIDELINES

1 MULTI-HAZARD EXPOSURE

A multi-hazard exposure analysis plots the geographic extent of a country's major hazards and inventories the people, property, and other elements subject to potential losses within those corresponding zones. Geography, topography, hydrology, climate, and other factors help determine each hazard's exposure pattern in relation to population, infrastructure, housing and other elements of interest. The geographic extent, frequency and severity of hazard occurrences are considered as well—helping to estimate hazard potential and magnitude and its relative importance. Sample datasets used to assess multi-hazard exposure are included below.

SAMPLE HAZARDS

Cyclone

Flood

Landslide

Tsunami

Volcano

Earthquake

ANALYSIS

MULTI-HAZARD EXPOSURE

SAMPLE DATASETS

UTILITIES

- Power Plants
- Sewers
- Dams
- Communication Networks

ENVIRONMENTAL FEATURES

- Rivers
- Lakes
- Land Use
- Forest Cover

EMERGENCY SERVICES

- Fire Stations
- Emergency Shelters
- Police Stations
- Health Centers / Hospitals
- Emergency Operations Centers

DATA SHARING OBJECTIVE

All societal components, including people, infrastructure, the environment, and economic drivers, may exist within a hazard's exposure zone. Once accurately plotted, these zones provide greater insight into the extent of a country's or a community's exposure. The following datasets are examples of national and community characteristics that may be plotted within hazard exposure zones.

ANALYSIS

MULTI-HAZARD EXPOSURE

SAMPLE DATASETS

DEMOGRAPHICS

- Population Centers
- Population Density
- Administrative Jurisdictions
- Demographic Markers

ECONOMICS

- Agricultural Production
- Key Resources
- Dominant Business Sector
- Tax Bases

TRANSPORTATION INFRASTRUCTURE

- Bridges, Roads, Highways
- Airports, Seaports, Heliports
- Train and Bus Stations
- Railroads

OTHER EXAMPLES

- Places of Worship
- Schools
- Prisons
- Government Buildings
- Cultural Sites
- Cemeteries

SAMPLE HAZARD ZONES

Panama: Sea Level Rise Exposure

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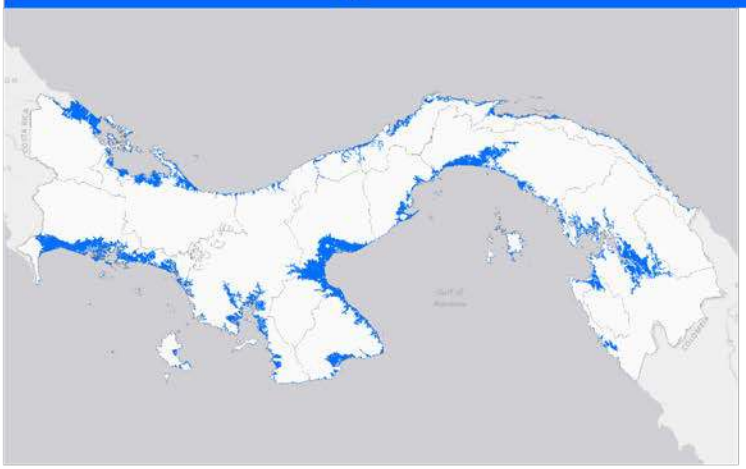

Panama Projected Sea Level Rise

Areas vulnerable to projected sea level rise

Provincial Boundaries

MAXIMUM POTENTIAL POPULATION EXPOSURE

888,489 (22.7%)

People exposed to projected sea level rise

Children <15 yrs	Adults 15-64 yrs	Elderly >64 yrs
26%	65%	9%

TOTAL CAPITAL EXPOSURE $31.5 billion

Capital exposure is the estimated cost to rebuild in the worst affected areas.

CRITICAL INFRASTRUCTURE EXPOSED

Critical infrastructure exposure for advanced planning and decision making.

Hospitals and Health Centers Exposed	Fire Stations Exposed	Airports Exposed	Ports Exposed	Schools & Universities Exposed
30 (41%)	26 (32%)	27 (47%)	12 (27%)	445 (13%)

Panama: Wildfire Hazard Exposure

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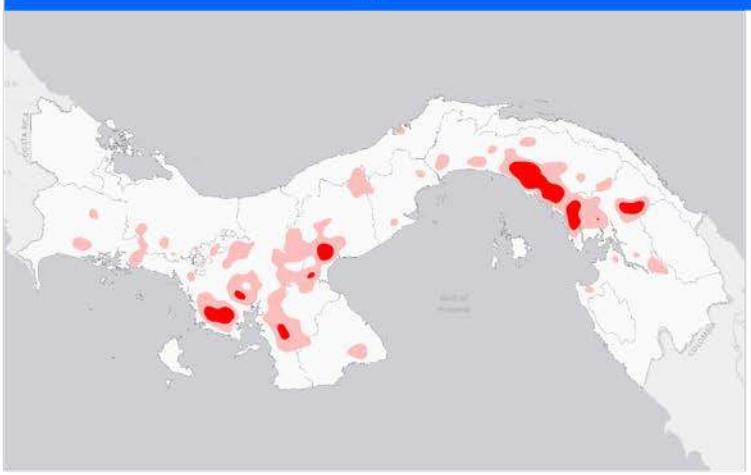


Panama Wildfire Zones

Medium

High

Provincial Boundaries

MAXIMUM POTENTIAL POPULATION EXPOSURE

656,939 (16.8%)

People exposed to wildfire (medium and high)

Children <15 yrs	Adults 15-64 yrs	Elderly >64 yrs
26%	65%	9%

TOTAL CAPITAL EXPOSURE $21 billion

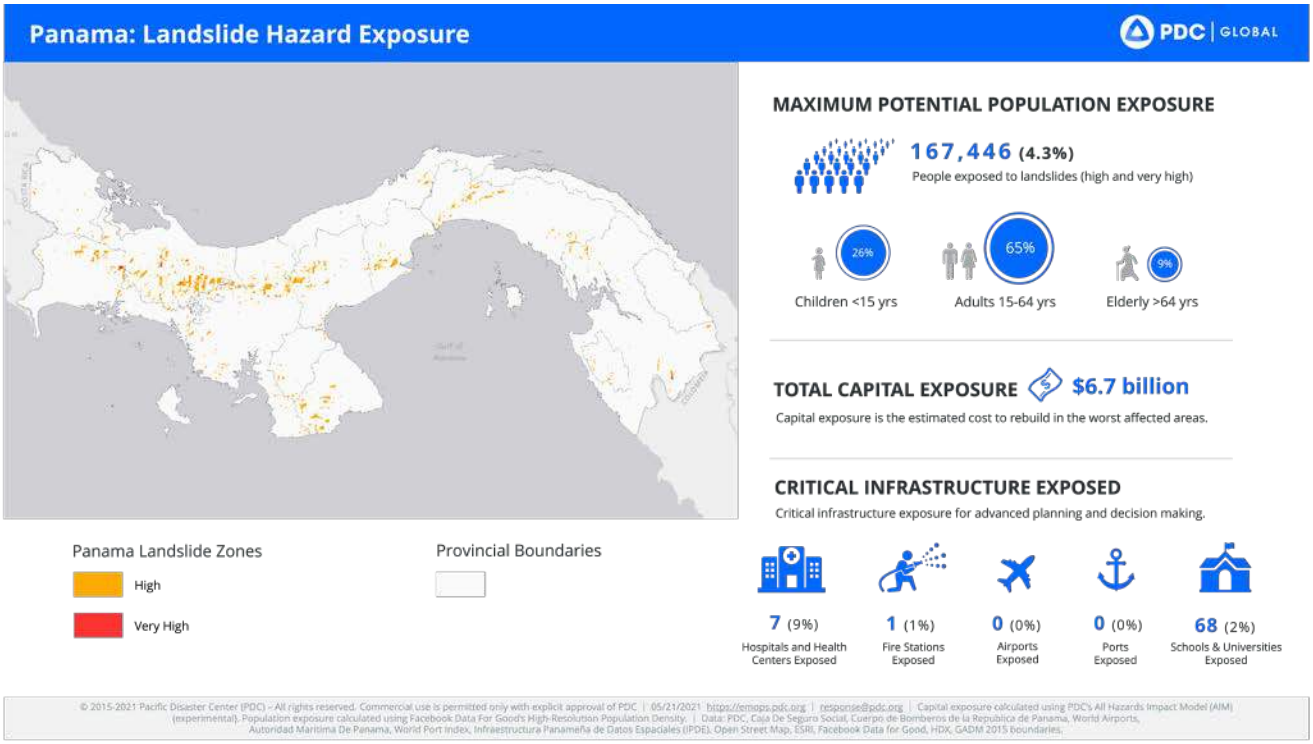
Capital exposure is the estimated cost to rebuild in the worst affected areas.

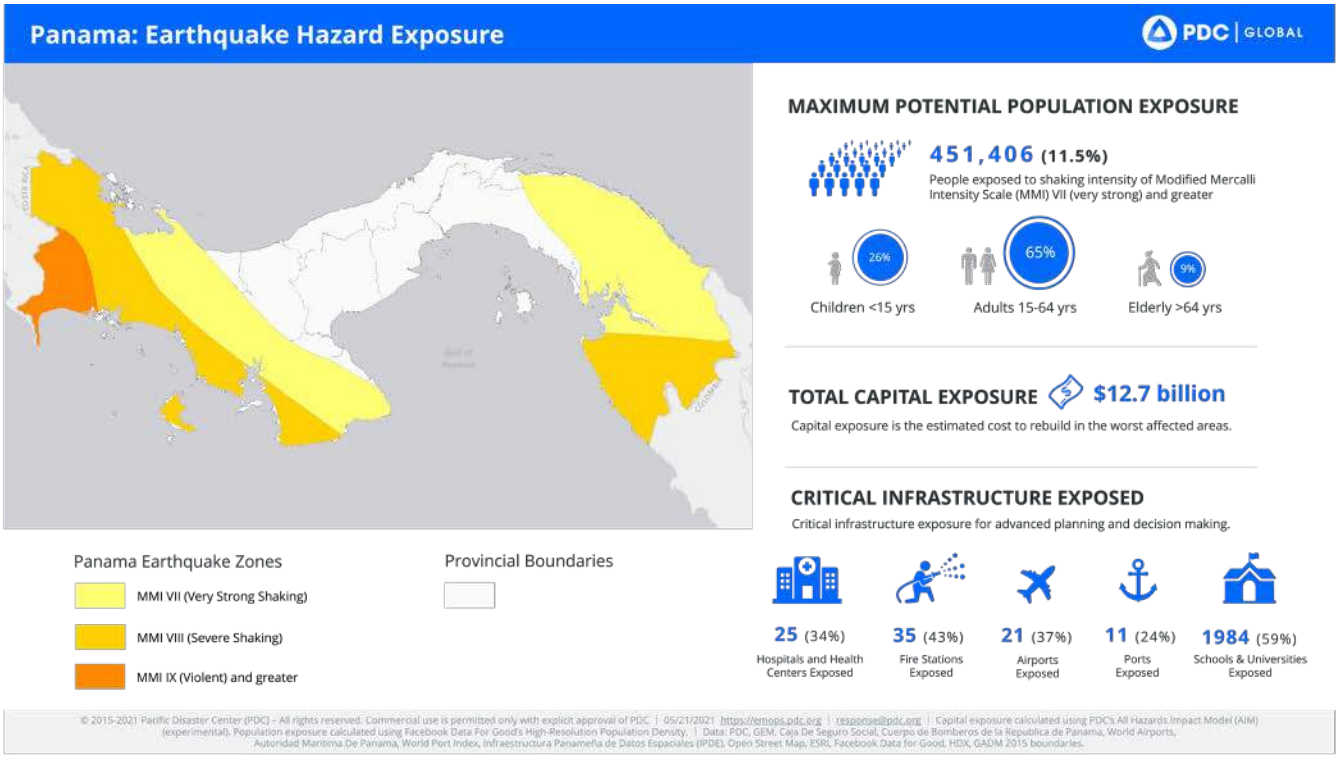
CRITICAL INFRASTRUCTURE EXPOSED

Critical infrastructure exposure for advanced planning and decision making.

Hospitals and Health Centers Exposed	Fire Stations Exposed	Airports Exposed	Ports Exposed	Schools & Universities Exposed
11 (15%)	9 (11%)	3 (5%)	5 (11%)	578 (17%)

SAMPLE HAZARD ZONES





THE RVA

RISK AND VULNERABILITY ASSESSMENT

VULNERABILITY DATA SHARING GUIDELINES

2 VULNERABILITY

A vulnerability analysis measures the physical, environmental, social, and economic conditions and processes that increase susceptibility of communities and systems to the damaging effects of hazards. Multiple factors influencing disaster outcomes, including those linked to poverty and development, are considered in the analysis. Each of the major vulnerability subcomponents is listed below, along with examples of indicators that support their characterization.

SUBCOMPONENTS

- Population Pressures
- Clean Water Access Vulnerability
- Gender / Ethnic Inequality
- Information Access Vulnerability
- Vulnerable Health Status
- Economic Constraints
- Environmental Stress
- Conflict Impacts

VULNERABILITY SUBCOMPONENT

POPULATION PRESSURES

SAMPLE DATASETS

- POPULATION CHANGE OVER TIME
- URBANIZATION OVER TIME
- INFORMAL SETTLEMENTS

DATA SHARING OBJECTIVE

Rapid changes in population size and distribution present planning challenges and can destabilize social, economic, and environmental systems. In addition to altering exposure patterns, the resulting misalignment of needs, institutional structures, and available resources can rapidly deplete resources and strain infrastructure and service delivery before, during, and after an event.

VULNERABILITY SUBCOMPONENT

CLEAN WATER ACCESS VULNERABILITY

SAMPLE DATASETS

- ACCESS TO IMPROVED WATER SOURCE
- ACCESS TO FLUSHING TOILETS
- ACCESS TO PIPED WATER

OTHER EXAMPLES

- ACCESS TO IMPROVED SANITATION (e.g. treatment facility, septic system)

DATA SHARING OBJECTIVE

The availability, quality, and status of water-related infrastructure influences post-disaster response and recovery outcomes. Those without easy or adequate access to distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Poor water quality contributes to communicable disease and poor nutrition.

VULNERABILITY SUBCOMPONENT

GENDER / ETHNIC INEQUALITY

SAMPLE DATASETS

- GOVERNMENT LEADERSHIP ROLES HELD BY FEMALES (male / female ratio)
- FEMALES ENROLLED IN SECONDARY SCHOOL (male / female ratio)
- POLITICAL OR ECONOMIC DISCRIMINATION

OTHER EXAMPLES

- MEASURES OF INCOME INEQUALITY
- TRENDS IN FEMALE EMPLOYMENT

DATA SHARING OBJECTIVE

Group-based differences in access to resources, services, opportunities, and formal economic and political structures that favor some groups over others influence the disaster susceptibility of the groups and individuals affected. Marginalized populations are less likely to have their needs met under “normal” conditions, and therefore become even more susceptible to harm when disasters strike.

They may be excluded from and/or overlooked in risk-reduction and preparedness planning efforts, and denied equal access to assistance during response and recovery. Identification of significant inequality can help to forecast where relief and mass care operations (e.g., sheltering, health care delivery) needs will be greatest.

VULNERABILITY SUBCOMPONENT

INFORMATION ACCESS VULNERABILITY

SAMPLE DATASETS

- ADULT LITERACY
- LANGUAGES SPOKEN
- HOUSEHOLDS WITH TV, INTERNET, RADIO

OTHER EXAMPLES

- AVERAGE YEARS OF SCHOOLING
- ENROLLMENT IN EDUCATION (PUBLIC / PRIVATE)

DATA SHARING OBJECTIVE

The ability to access and comprehend hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.

VULNERABILITY SUBCOMPONENT

VULNERABLE HEALTH STATUS

SAMPLE DATASETS

OTHER EXAMPLES

- MATERNAL MORTALITY
- NON-COMMUNICABLE DISEASES
- INFECTIOUS DISEASES (e.g. tuberculosis, malaria)
- SPECIAL NEEDS POPULATION

DATA SHARING OBJECTIVE

A population's health status, and the status of mechanisms that support public health greatly influence short- and long-term disaster outcomes. Poor health is often correlated with increased susceptibility to injury, disease, and stress associated with disasters and can limit response capacity (e.g., evacuation).

VULNERABILITY SUBCOMPONENT

ENVIRONMENTAL STRESS

SAMPLE DATASETS

- DEPLETION OF FRESHWATER SOURCES
- FOREST LOSS OVER TIME
- LAND DEGRADATION (erosion, saltwater intrusion)

OTHER EXAMPLES

- NUMBER OF GRAZING ANIMALS
- EXTENT OF FERTILIZER / PESTICIDE USE
- EXTENT OF AQUIFER DEPLETION

DATA SHARING OBJECTIVE

Natural resources not only provide the foundation for economic activities, they may also act as buffers to the effects of hazards. Environmental stressors such as the depletion or contamination of natural resources (e.g., forests, fresh water, fisheries), can negatively impact the health, safety, and economic security of the populations that depend on them. Water and land degradation can damage habitat and reduce quantity and quality of resources required to maintain human health and livelihoods. The loss of environmental buffers like mangroves, dunes, and wetlands, or the removal of anchoring vegetation or subterranean support, can exacerbate the damaging effects hazards and even create new hazards altogether.

VULNERABILITY SUBCOMPONENT

ECONOMIC CONSTRAINTS

SAMPLE DATASETS

- POPULATION AT WORKING AGE
- POVERTY RATES
- UNEMPLOYMENT RATES

OTHER EXAMPLES

- POPULATION WITH UNMET NEEDS
- ECONOMICALLY DEPENDENT
- HOUSEHOLDS RECEIVING SOCIAL PROGRAM BENEFITS
- ACCESS TO CREDIT
- RATES OF SAVINGS
- HOUSEHOLD INCOME / EXPENDITURES

DATA SHARING OBJECTIVE

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

VULNERABILITY SUBCOMPONENT

CONFLICT IMPACTS

SAMPLE DATASETS

- DEATHS RESULTING FROM CONFLICT
- REFUGEES AND ASYLUM SEEKERS
- INTERNALLY DISPLACED PERSONS

DATA SHARING OBJECTIVE

Countries affected by conflict are typically more susceptible to hazard impacts and stressors. Internally-displaced populations often lack economic and social support systems, and may have special needs associated with the impacts of conflict that limit their response and recovery capacity. As refugees, such populations can present a significant challenge to host countries and are unlikely to be included in existing disaster management plans.

THE RVA

RISK AND VULNERABILITY ASSESSMENT

ISLAND CAPACITY DATA SHARING GUIDELINES

3 ISLAND CAPACITY

Island Capacity represents the societal and institutional resources that islands can leverage and mobilize to prepare for and bear disaster impacts. Island Capacity and Logistics Capacity (defined in the following section) are used to measure overall Coping Capacity within island communities.

SUBCOMPONENTS

THE RVA

RISK AND VULNERABILITY ASSESSMENT

COPING CAPACITY DATA SHARING GUIDELINES

3 LOGISTICS CAPACITY

Logistics Capacity measures the ability of the islands to ensure efficient storage, movement, and delivery of resources key to effective humanitarian assistance and disaster relief operations. Logistics Capacity and Island Capacity (defined in the previous section) are used to measure overall Coping Capacity within island communities.

SUBCOMPONENTS

Distance to Port

Distance to International Airport

Distance to Warehouse

THE RVA

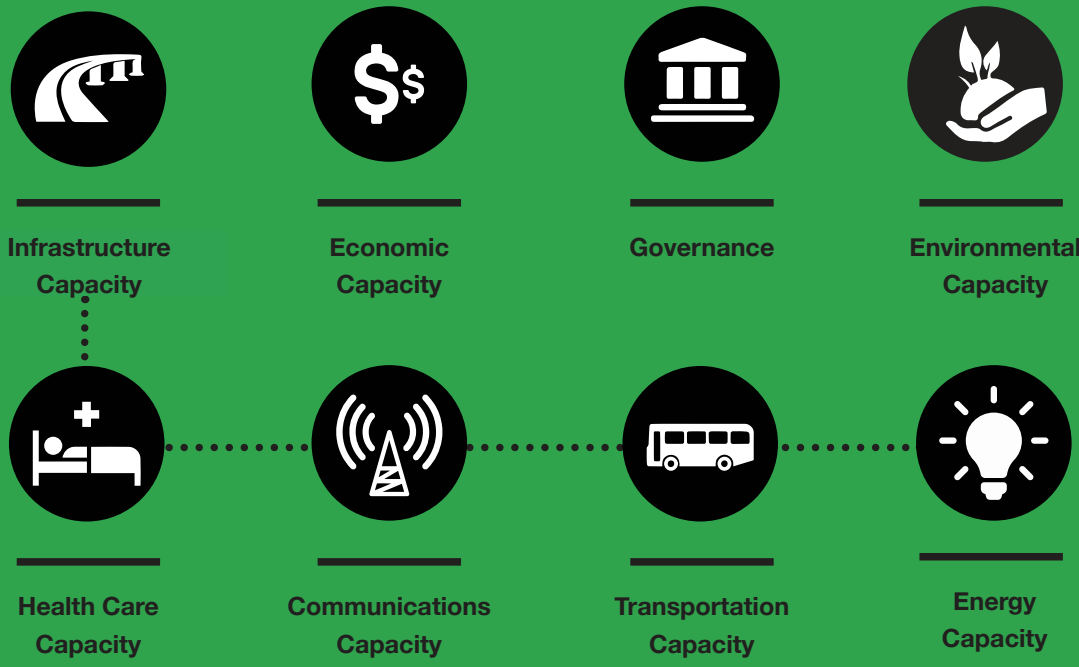
RISK AND VULNERABILITY ASSESSMENT

COPING CAPACITY DATA SHARING GUIDELINES

3 COPING CAPACITY

A coping capacity analysis measures the systems, means, and abilities of people and societies to absorb and respond to disruptions in normal function. It considers a range of factors that contribute to the ability of an impacted population to limit the likelihood or severity of the damaging effects of hazards and to manage disruptions that do arise. Sample subcomponents characterizing coping capacity are described below.

SUBCOMPONENTS



COPING CAPACITY SUBCOMPONENT

INFRASTRUCTURE CAPACITY

INFRASTRUCTURE CAPACITY SUBCOMPONENTS

- Health Care Capacity
- Communications Capacity
- Transportation Capacity
- Energy Capacity

DATA SHARING OBJECTIVE

The quality and availability of infrastructure resources required for normal societal functioning are indicators of the ability of people, organizations, and systems to face and manage adverse conditions, emergencies, or disasters. The infrastructure subcomponent measures the ability of countries to exchange information (communications), transport people and things (transportation), provide public health and medical services (health care), and provide access to energy for cooking, heating, transportation, manufacturing, and other purposes.

COPING CAPACITY SUBCOMPONENT

INFRASTRUCTURE: HEALTHCARE CAPACITY

SAMPLE DATASETS

- HOSPITALS AND HEALTH CENTER LOCATIONS
- VACCINATION RATE
- NURSES / MIDWIVES DENSITY

OTHER EXAMPLES

- HOSPITAL BED DENSITY
- NUMBER OF PHYSICIANS
- AVERAGE DISTANCE TO NEAREST HOSPITAL

DATA SHARING OBJECTIVE

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.

COPING CAPACITY SUBCOMPONENT

INFRASTRUCTURE: COMMUNICATIONS CAPACITY

SAMPLE DATASETS

- HOUSEHOLDS WITH FIXED OR MOBILE PHONES
- MOBILE PHONE COVERAGE
- COMMUNITY INTERNET ACCESS

DATA SHARING OBJECTIVE

The density, diversity, resilience, and quality of communications infrastructure influences how populations and responders are able to facilitate effective and coordinated response and recovery action.

COPING CAPACITY SUBCOMPONENT

INFRASTRUCTURE: TRANSPORTATION CAPACITY

SAMPLE DATASETS

DATA SHARING OBJECTIVE

Denser and more diverse transportation networks provide more options for bringing outside resources into an impacted area (e.g., ports and airports), and increase the ability of response stakeholders to access impacted populations. Transportation capacity is also indicative of evacuation capacity.

COPING CAPACITY SUBCOMPONENT

INFRASTRUCTURE: ENERGY CAPACITY

SAMPLE DATASETS

DATA SHARING OBJECTIVE

Homes, businesses, infrastructure, and government all rely on access to energy resources, including electricity, natural gas, and petroleum. Access to energy networks and the availability and quantity of energy reserves often dictate the speed with which recovery progresses in the aftermath of a disaster.

COPING CAPACITY SUBCOMPONENT

ENVIRONMENTAL CAPACITY

SAMPLE DATASETS

DATA SHARING OBJECTIVE

The ability of the environment to recover from a shock and maintain species health, biodiversity, and critical ecosystem services after impact is an indication of the capacity of the environment to endure hazards. The environment sustains populations by providing food, water, and even economic benefits from industries such as tourism.

COPING CAPACITY SUBCOMPONENT

ECONOMIC CAPACITY

SAMPLE DATASETS

- INCOME PER CAPITA
- GROSS DOMESTIC PRODUCT
- FINANCIAL RESERVES

OTHER EXAMPLES

- TAXES COLLECTED
- ECONOMIC DIVERSIFICATION
- HOUSEHOLDS RECEIVING REMITTANCES

DATA SHARING OBJECTIVE

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities.

COPING CAPACITY SUBCOMPONENT

GOVERNANCE

SAMPLE DATASETS

- NUMBER OF VIOLENT PROTESTS
- VOTER PARTICIPATION
- KEY SERVICES PROVIDED (e.g. trash collection)

OTHER EXAMPLES

- CONTROL OF CORRUPTION
- SCOPE OF GANG ACTIVITIES
- CRIME RATES
- CRIME CLEARANCE RATE

DATA SHARING OBJECTIVE

The stability and effectiveness of institutional structures to provide public services, freedom in selecting government, and enforcement of laws to prevent and control crime and violence is an indication of a government's ability to successfully mitigate and cope with hazards. Instability of institutional structures can make a region more susceptible to the negative effects of a disaster event.

THE RVA

RISK AND VULNERABILITY ASSESSMENT

DISASTER MANAGEMENT CAPABILITIES DATA SHARING GUIDELINES

4 DISASTER MANAGEMENT CAPABILITIES

A disaster management capabilities analysis measures the distribution, form, and quality of disaster management systems and resources. It is a measurement of what is actively being done by disaster management agencies and systems to mitigate risk—examined separately from societal coping capacities that exist solely due to development in a country as a whole. The existence or absence of systems and resources are both effective indicators of how small or great the impacts of a disaster will be. Sample subcomponents characterizing disaster management capabilities are described below.

SUBCOMPONENTS

Emergency Services

Disaster Finance

Early Warning and Monitoring

Mass Care Support

DISASTER MANAGEMENT CAPABILITIES SUBCOMPONENT

EMERGENCY SERVICES

SAMPLE DATASETS

- FIREFIGHTER DENSITY
- EMERGENCY VEHICLES DENSITY
- SIZE AND LOCATION OF CITIZEN BRIGADES

OTHER EXAMPLES

- DISTANCE TO FIRE DEPARTMENT
- DISASTER EQUIPMENT
- EMERGENCY OPERATIONS CENTER LOCATIONS
- SEARCH AND RESCUE TEAMS (e.g. location, number)

DATA SHARING OBJECTIVE

Societies establish capacities to manage emergencies that scale from day-to-day events up to catastrophes that impact all of society. There exists a broad range of systems and services that together inform assessment of emergency service capacity.

DISASTER MANAGEMENT CAPABILITIES SUBCOMPONENT

DISASTER FINANCE

SAMPLE DATASETS

- ACCESS TO CONTINGENT CREDIT
- CONTINGENCY FUNDS
- ACCESS TO MICRO-INSURANCE AND RISK-SHARING

OTHER EXAMPLES

- TYPE / PENETRATION OF COMPREHENSIVE AND HAZARD-SPECIFIC INSURANCE (e.g. households, businesses, public sector)

DATA SHARING OBJECTIVE

The availability of financial resources to address the costs associated with both the response to a disaster and the recovery, reconstruction, and rehabilitation that occur in its aftermath ultimately dictate the speed and success achieved. Financial support comes in many forms, with the most effective being those that are institutionalized and based on needs as forecasted.

DISASTER MANAGEMENT CAPABILITIES SUBCOMPONENT

MASS CARE SUPPORT

SAMPLE DATASETS

- SHELTER CAPACITY
- WAREHOUSE LOCATIONS AND QUANTITIES
- WET AND DRY MEAL DISTRIBUTION CAPACITY

OTHER EXAMPLES

- EVACUATION PLAN COVERAGE
- EVACUATION RESOURCE CAPACITY
- SHELTER STAFFING RESOURCES AND DISTRIBUTION
- HEAVY LIFT AND TRANSPORT CAPACITY
- MOBILE, POTABLE WATER TREATMENT
- QUANTITY / LOCATION OF PLANNED COMMODITY DISTRIBUTION POINTS

DATA SHARING OBJECTIVE

Many of the unmet population needs encountered in a disaster are addressed through mass care support systems. These include the plans, actions, resources, facilities, and services that together address the sheltering, feeding, hydration, hygiene, childcare, and dignity requirements of the affected population, among other needs.

DISASTER MANAGEMENT CAPABILITIES SUBCOMPONENT

EARLY WARNING AND MONITORING

SAMPLE DATASETS

- EXISTENCE OF ALERT SYSTEMS BY HAZARD
- HAZARD ALERT SYSTEM
- POPULATION COVERAGE OF ALERT SYSTEMS

OTHER EXAMPLES

- HAZARD MONITORING BY HAZARD (e.g. flood gauge locations, slope monitoring, avalanche monitoring, tsunami buoys, seismic detection, volcanic tilt meters, doppler radar coverage)
- ALERT SYSTEM LANGUAGES

DATA SHARING OBJECTIVE

Hazard monitoring systems and resources enable recognition of an impending event and therefore the activation of necessary pre-disaster protection and response actions (e.g., pre-positioning of people, equipment, and resources). Early warning systems enable communication with an exposed population about actual or impending events, also for the purpose of pre-disaster protection and response activities (e.g., evacuation, shelter-in-place, stockpiling of goods). Systems are often unique to individual hazards as dictated by recognition and early warning potential.

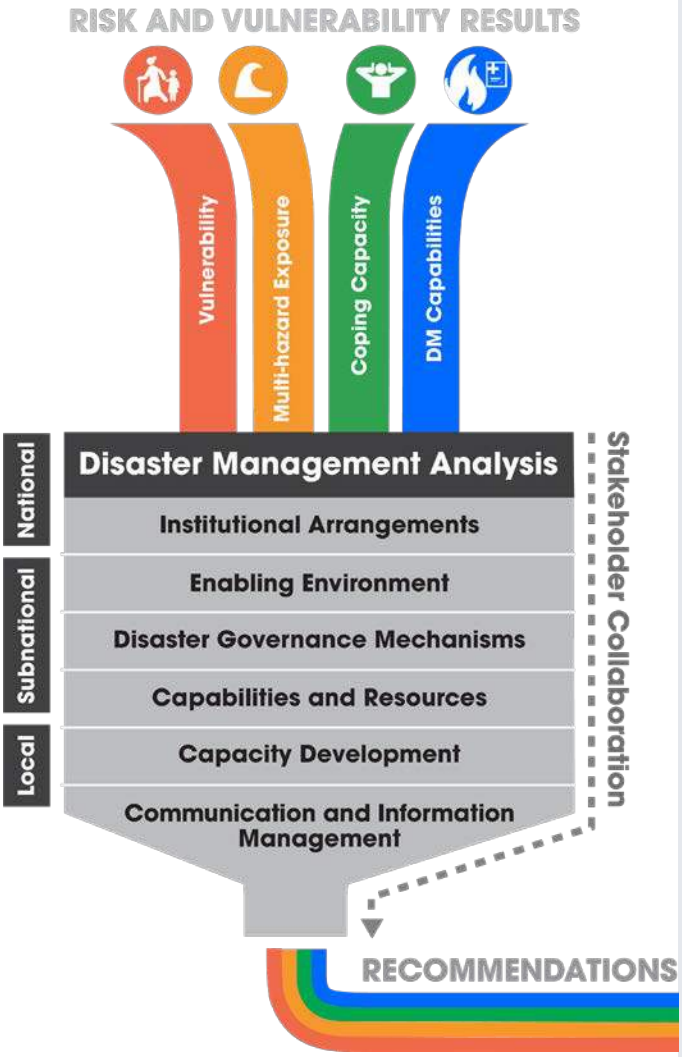
THE DMA

DISASTER MANAGEMENT ANALYSIS

PDC's Disaster Management Analysis (DMA) provides contextualization for the Risk and Vulnerability Assessment (RVA) and guides recommendations designed to strengthen capabilities and reduce losses. It enables more effective prioritization of risk-reduction and resilience-building initiatives. The analysis of disaster management capacity takes a holistic snapshot across a broad spectrum of capacity components, including systems, strategies, resources, structures, and other elements through which pre- and post-disaster risk are reduced.

DISASTER MANAGEMENT ANALYSIS

MEASURING CAPACITY



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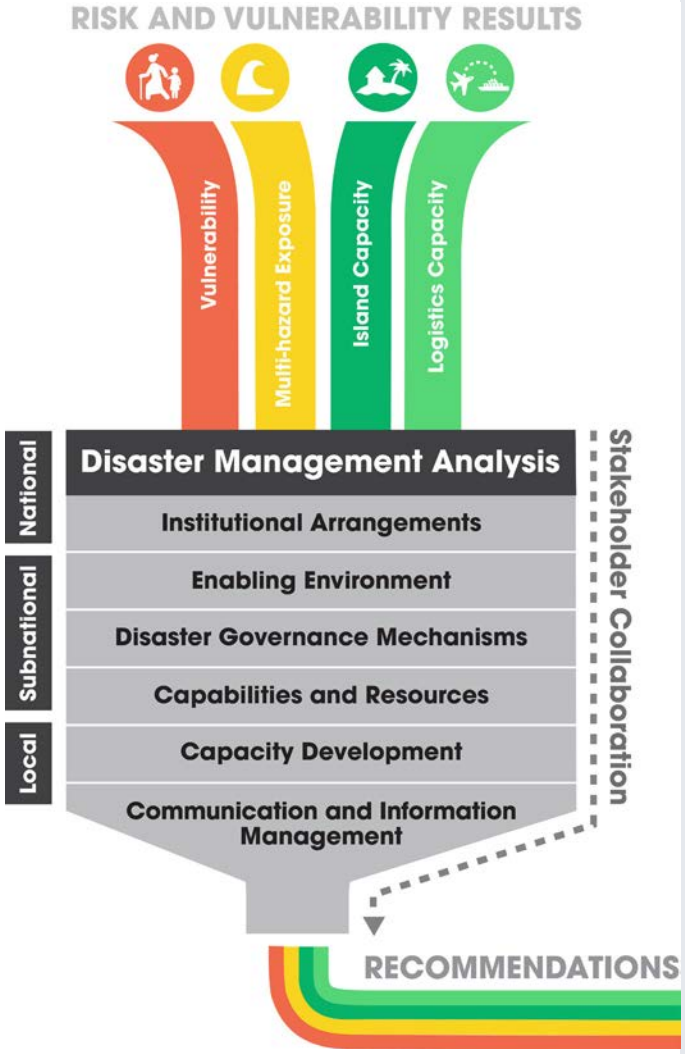
OBJECTIVE

To enable more effective prioritization of risk-reduction and resilience-building initiatives and to enable decision makers and communities to prioritize actions for disaster risk reduction and disaster governance at all levels.

DISASTER MANAGEMENT ANALYSIS
MEASURING CAPACITY



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OBJECTIVE

To enable more effective prioritization of risk-reduction and resilience-building initiatives and to enable decision makers and communities to prioritize actions for disaster risk reduction and disaster governance at all levels.

DISASTER MANAGEMENT ANALYSIS THEMES

The DMA aims not only to limit hazard risk as assessed, but also address the anticipated response and recovery needs of hazard-exposed populations, economies, and societies. The manner in which unmet capacity is identified, qualified, and quantified supports a sharper focus on cost-effective investment planning. It also helps support long-term development in a manner that directly reflects the Sendai Framework and Sustainable Development Goals. The analysis considers needs in relation to multi-hazard risk, and is based on sector-defined capacity standards. Associated themes are listed below with examples of the data and information that help to inform the analysis.

Institutional Arrangements

Enabling Environment

Disaster Governance Mechanisms

Capabilities and Resources

Capacity Development

Communication and Information Management

DISASTER MANAGEMENT ANALYSIS THEME

INSTITUTIONAL ARRANGEMENTS

The organizational and institutional structures through which disaster management capacity forms is an indication of country's institutional arrangements. By examining the organization and composition of diverse agencies and individuals that constitute a nation's disaster management capacity—detailing the relationships and collaboration between them—tangible opportunities for increased effectiveness are often revealed. The DMA analyzes sub-themes that characterize institutional arrangements. Samples of these are detailed below and cover broad set of topics ranging from the integration of disaster risk reduction, sustainable development, and climate change adaptation to the empowerment of disaster management leadership.

- ORGANIZATIONAL STRUCTURES
- LEADERSHIP ARRANGEMENTS
- MECHANISMS FOR STAKEHOLDER ENGAGEMENT

DISASTER MANAGEMENT ANALYSIS THEME

ENABLING ENVIRONMENT

Disaster management structures, authorities, processes, and capabilities are enabled by a country's legal, institutional, financial, and social instruments. These rules, laws, policies, and other parameters allow capacity to develop and to achieve an effective risk reduction vision. The DMA analyzes sub-themes that characterize an enabling environment. Samples of these are detailed below and cover a range of issues from the existence and applicability of legislation to disaster management stakeholders' attitudes and experience.

- LEGAL INSTRUMENTS
- FINANCIAL RESOURCES
- STRATEGIES
- PUBLIC CONFIDENCE
- POLITICAL SUPPORT
- ATTITUDES AND EXPERIENCE

DISASTER MANAGEMENT ANALYSIS THEME

DISASTER GOVERNANCE MECHANISMS

Disaster management efforts are most effective when guided by standard, formalized systems and procedures that dictate how and by whom activities are conducted. The effectiveness of all disaster management phases, including disaster preparedness, hazard mitigation, response, and recovery, is dependent on the establishment and documentation of such mechanisms. The DMA analyzes each of these mechanisms, or sub-themes, within the national and subnational contexts, including governance infrastructure which focuses primarily on emergency operations and incident coordination centers. Sample analysis sub-themes are detailed below.

- PLANS
- STANDARD OPERATING PROCEDURES
- COMMAND, CONTROL, AND COORDINATION SYSTEMS
- EMERGENCY OPERATIONS CENTERS

DISASTER MANAGEMENT ANALYSIS THEME

CAPABILITIES AND RESOURCES

The nature and extent of skills, knowledge, supplies, resources, equipment, facilities, and other capacity components dedicated to meeting disaster management needs is an indication of a country's overall capabilities and resources. The DMA examines these sub-themes which include the source and size of surge capacities available in times of disaster, and broad array of disaster-focused functional capabilities like search and rescue, sanitation, and security. Sample analysis sub-themes are detailed below.

- DEDICATED FACILITIES AND EQUIPMENT
- HUMAN RESOURCES
- INVENTORY OF COMMODITIES AND SUPPLIES
- TARGETED FUNCTIONAL CAPABILITIES

DISASTER MANAGEMENT ANALYSIS THEME

CAPACITY DEVELOPMENT

The ability of nations to advance disaster management strategies that achieve risk reduction and resilience goals is ultimately dependent on their ability to support capacity development. From training and education that supports the advancement of knowledge and skills, to the institutionalization of appropriate attitudes and cultures, capacity development requires the continuous advancement of assessments, strategic plans, programs, facilities, and many other sub-themes The DMA analyzes these sub-themes, looking at resources and opportunities for all stakeholders and all sectors, from individuals and special-needs groups to government responders. Sample analysis sub-themes are detailed below.

- CAPACITY DEVELOPMENT PLANS AND STRATEGIES
- TRAINING AND EDUCATION PROGRAMS AND FACILITIES
- CERTIFICATION PROGRAMS
- AFTER-ACTION REPORTING
- MONITORING AND EVALUATION PROCESSES AND SYSTEMS

DISASTER MANAGEMENT ANALYSIS THEME

COMMUNICATION AND INFORMATION MANAGEMENT

Disaster management is a risk-based endeavor, and as such the capacity of stakeholders to generate, manage, and share risk and incident-related information is critical. This area of analysis looks at the systems, processes, and procedures that have been established to inform pre- and post-disaster activities. From hazard mapping, to event monitoring, to warning and notification, communication and information management sub-themes address a broad range of topics that highlight effective practices. Sample analysis sub-themes are detailed below.

- HAZARD AND RISK ANALYSIS SYSTEMS
- DISASTER ASSESSMENT
- INFORMATION COLLECTION, MANAGEMENT, AND DISTRIBUTION
- MEDIA AND PUBLIC AFFAIRS

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