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# Coastal City Adaptation Project

## Disaster Resilience Scorecard: Pemba Baseline Assessment

February 2015



## Executive Summary

- Ten Essentials for Making Cities Resilient is a framework for helping cities understand key drivers of ability to cope with natural disasters
- Consultants and CCAP team members conducted assessment through stakeholder interviews and review of secondary sources
- Overall average score for Pemba is 1.8 (out of 5), which indicates achievements in certain areas but more capacity and institutional commitment required to improve
- Highest scores are in education/health infrastructure and availability of training in disaster preparedness
- Lowest score is in financial planning for disasters (including contingency funds, insurance, and financial incentives for disaster resilience)



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## Ten Essentials for Making Cities Resilient\*

- 1 Engage, share understanding, and coordinate
- 2 Create financing and incentives
- 3 Identify and understand perils, probabilities and impacts
- 4 Make critical infrastructure disaster resilient
- 5 Make education and healthcare infrastructure disaster resilient
- 6 Apply risk-aware planning, land use and building codes
- 7 Build public awareness and capacity
- 8 Enhance and protect ecosystem services
- 9 Create warning systems and rehearse preparedness
- 10 Learn and build back better

\*Developed by UNISDR as part of “Making Cities Resilient” campaign; the ten essentials align with the Hyogo Framework for Action 2005-2015; see <http://www.unisdr.org/campaign/resilientcities/toolkit/essentials>



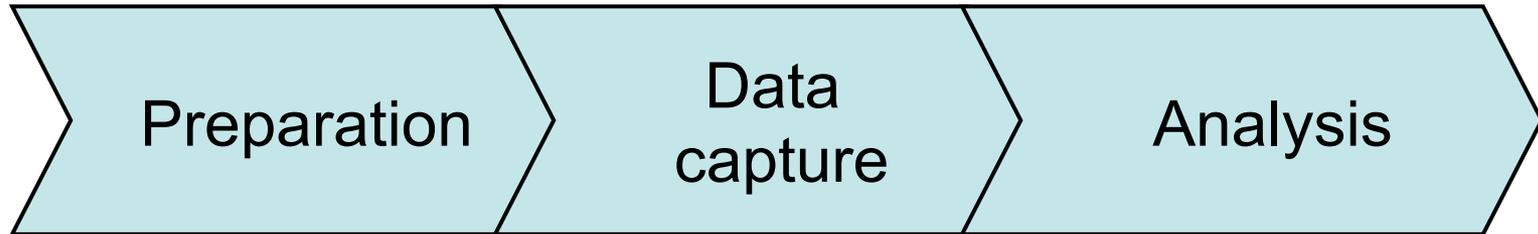
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## Disaster Resilience Scorecard Objectives

- Help Pemba better understand its ability to mitigate potential disasters and identify gaps
- Serve as a guide to city stakeholders to set priorities for achieving short- and long-term goals
- Establish baseline for one indicator that CCAP will use to monitor the impact of its activities (follow-up assessments will be conducted at project mid-point and before the end of the project)



## Methodology



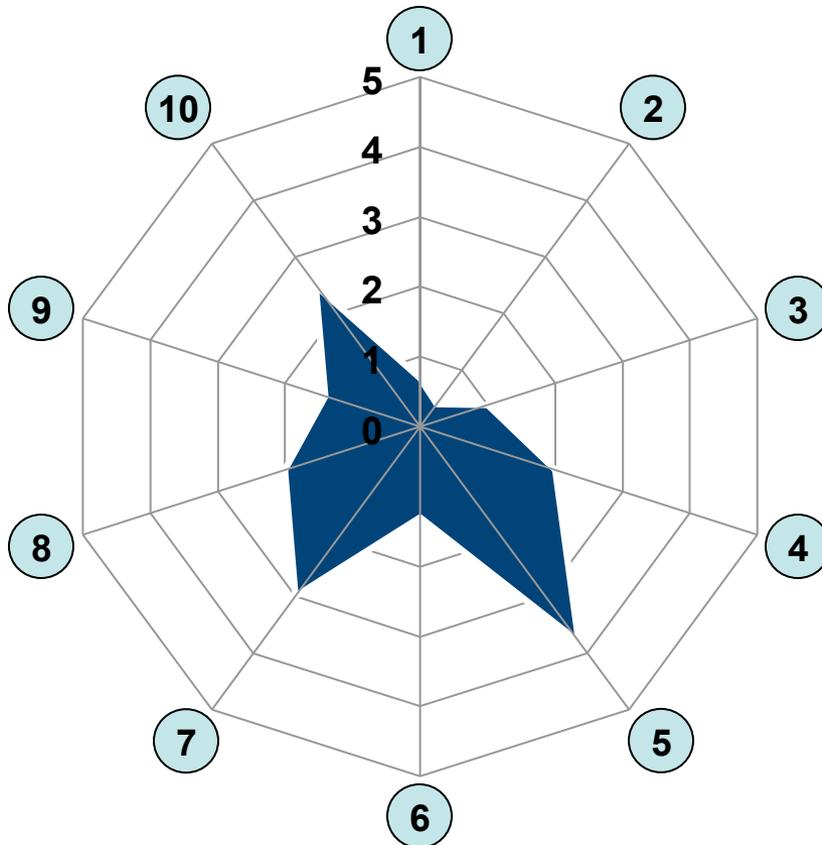
- Review existing assessments
  - Develop interview guide
  - Identify stakeholders and data needed to complete assessment
- Interview national-level stakeholders
  - Interview city-level stakeholders
  - Review secondary information sources
- Complete scorecard and calculate scores
  - Share results with stakeholders



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## Summary of Scores for Pemba

Average score = 1.8



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### Description of scores

5 - **Comprehensive achievement** has been attained, with the commitment and capacities to sustain efforts at all levels.

4 - **Substantial achievement** has been attained, but with some recognized deficiencies in commitment, financial resources or operational capacities.

3 - There is some institutional **commitment and capacities to achieving disaster risk reduction** but progress is not comprehensive or substantial.

2 - Achievements have been made but are **incomplete**, and while improvements are planned, the commitment and capacities are limited.

1 - Achievements are **minor** and there are few signs of planning or forward action to improve the situation.



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# Detailed Scores by Essential

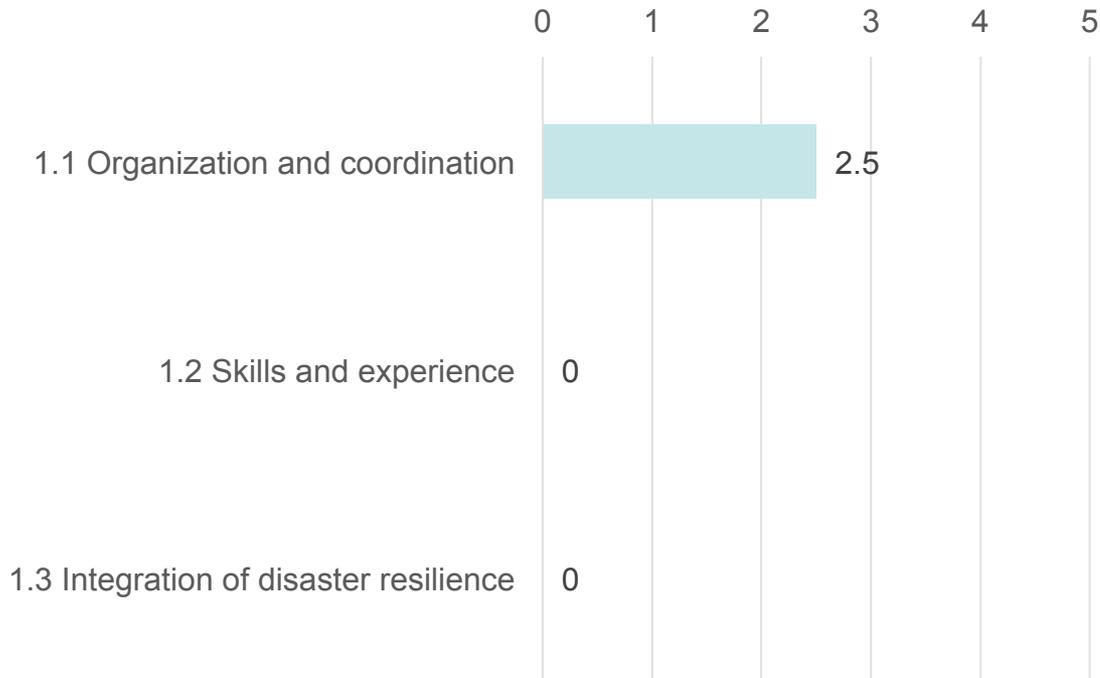
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**Essential 1:** Put in place organization and coordination to understand and reduce disaster risk, based on participation of citizen groups and civil society. Build local alliances. Ensure that all departments understand their role in disaster risk reduction and preparedness.

Average score = 0.8



### Key findings

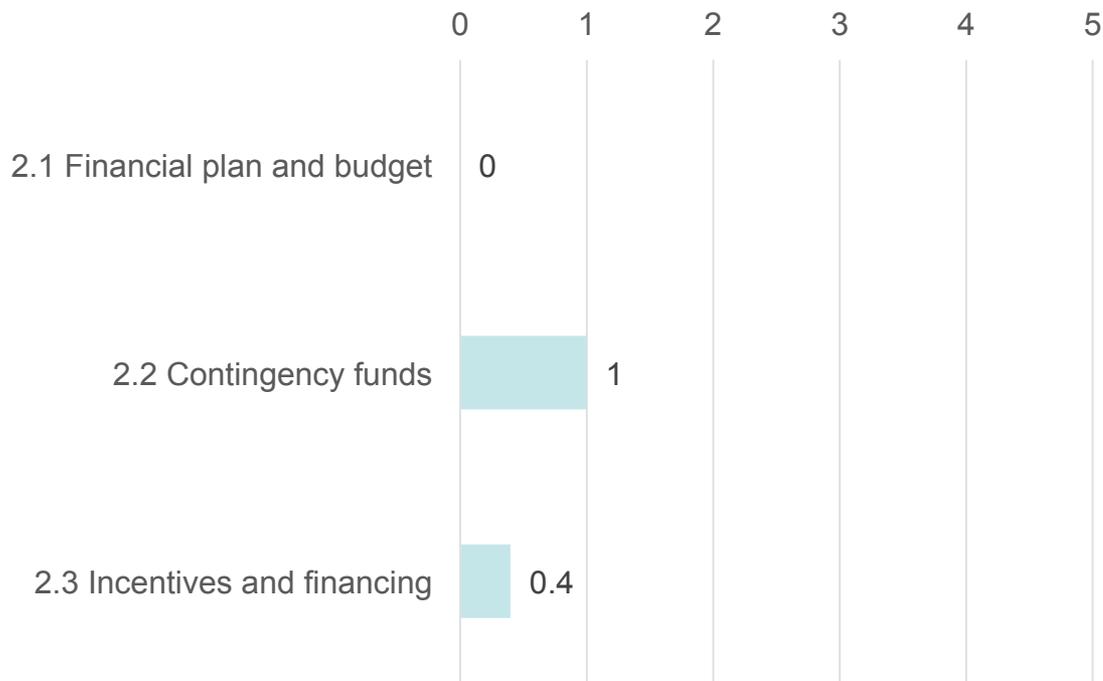
- Emergency Operations Center (COE) and role of INGC in coordinating and planning disaster response is established in theory, but roles of EOC, local government, and line ministries not documented
- Only 40% of neighborhoods are covered by Comitês Locais de Gestão de Risco de Calamidades (CLGRCs) and training may not be adequate to cover all needs
- No comprehensive inventory (or gap analysis) of key skills, experience, and knowledge required for resilience to disasters or climate change
- No explicit stage in budget approval process to evaluate disaster or climate change impacts of projects



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**Essential 2:** Assign a budget for disaster risk reduction and provide incentives for homeowners, low-income families, communities, businesses and public sector to invest in reducing the risks they face.

Average score = 0.5



### Key findings

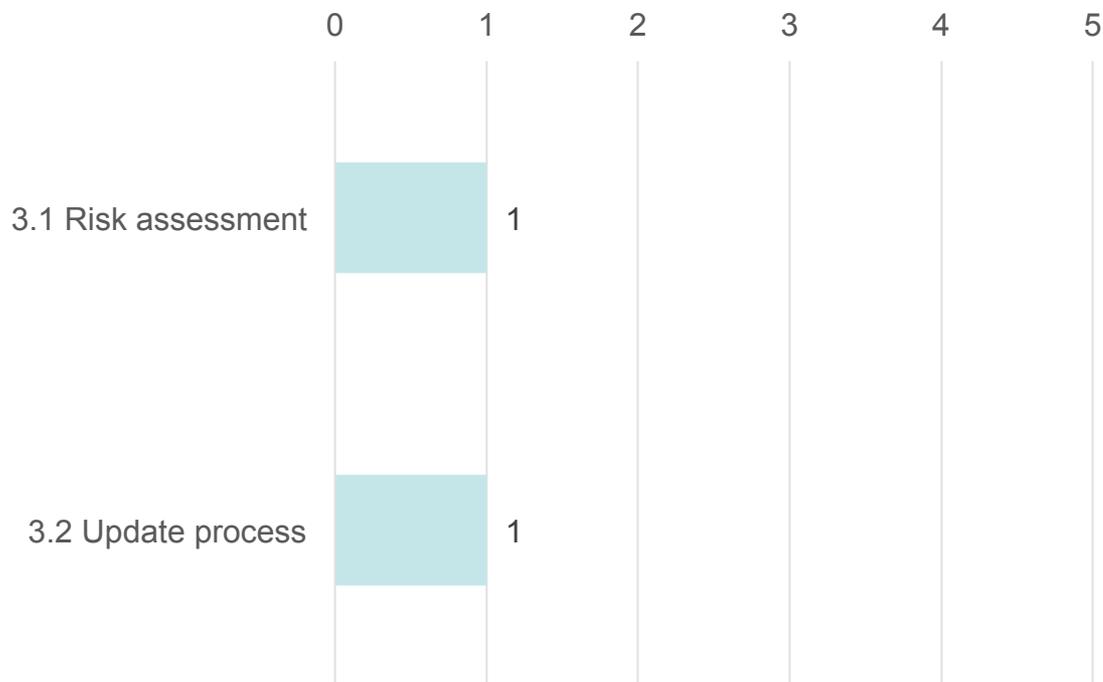
- Financial plans for city (whether driven by provincial line ministries or municipal officials) do not explicitly take into consideration disaster resiliency or climate change
- National and municipal contingency funds are not sufficient to cover expected losses due to most probable disaster scenario
- Financing to achieve disaster-resilient housing is virtually non-existent
- Insurance penetration for homes/businesses is negligible, particularly for most vulnerable populations



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**Essential 3:** Maintain up-to-date data on hazards and vulnerabilities, prepare risk assessments and use these as the basis for urban development plans and decisions. Ensure that this information and the plans for your city's resilience are readily available to the public and fully discussed with them.

Average score = 1



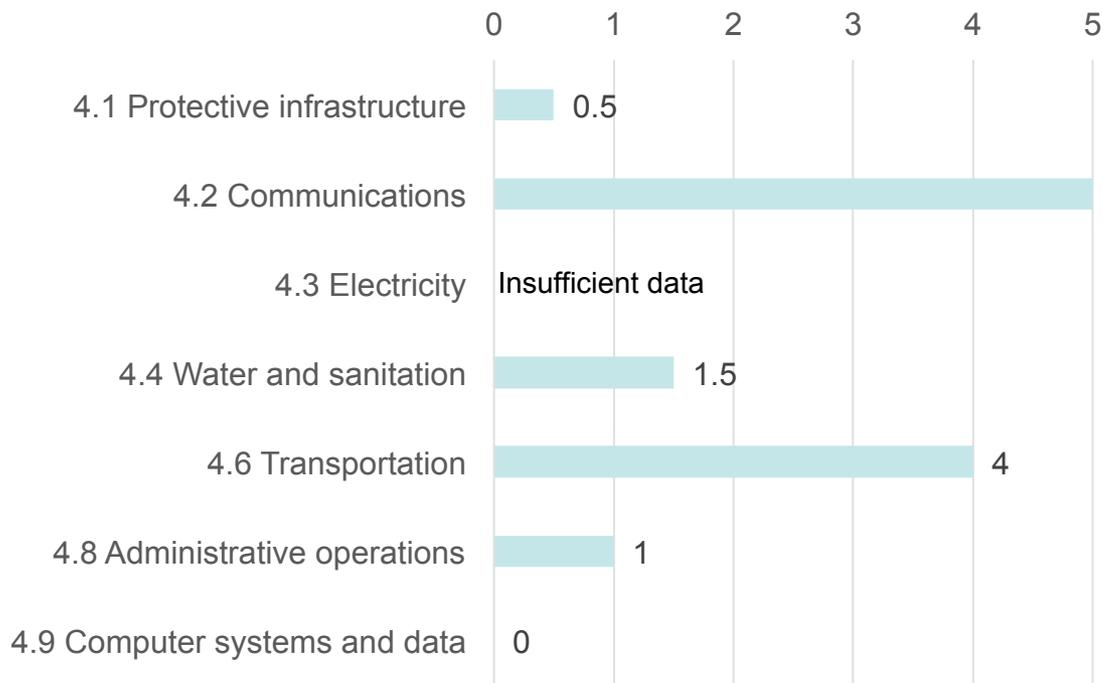
### Key findings

- Local INGC office has categorized hazards into three scenarios by severity
- However, a provincial contingency plan with vulnerability and risk assessments does not exist and key partners in disaster management may be missing critical information
- General information on hazards exists, as well as historical data on types of hazards and impact, but little awareness of where to find data. Also difficult to assess accuracy of data reflecting impact.
- Critical assets are unknown, and the impact of natural hazards on housing, commercial buildings, economic activities, among other important assets are unknown



**Essential 4:** Invest in and maintain critical infrastructure that reduces risk, such as flood drainage, adjusted where needed to cope with climate change.

Average score = 2



Note: 4.5 (Gas) utility was not assessed as Pemba does not have a piped gas network; 4.7 (Law & order, first responders) was not assessed as we did not speak to police or defense forces

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*Key findings*

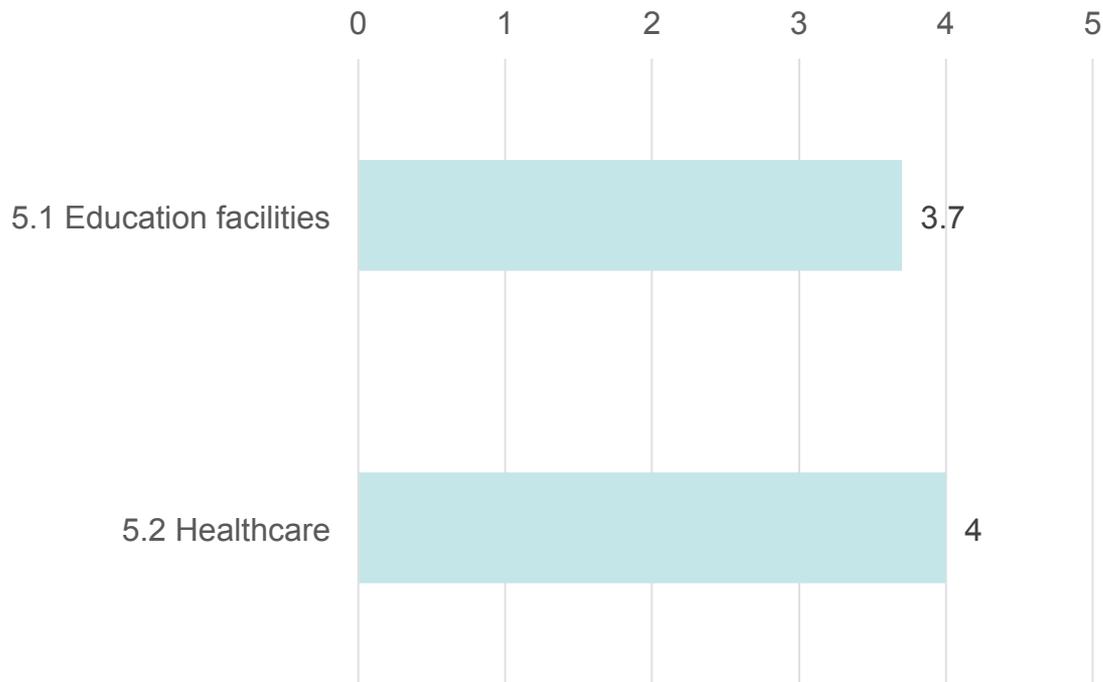
- No protective infrastructure exists to mitigate impact of natural hazards
- Drainage system does not cover a large portion of city and no regular maintenance inspections
- No loss of services due to weather-related events for mobile communication services, and no loss of services during most recent category 4 cyclone
- Over 38% of water customers could lose services during a natural disaster
- About 30 kilometers of road are impassable for up to 3 days during most probable natural disaster
- Significant disruptions to administrative municipal functions (48 hours or more) would occur during a disaster
- High risk of disruptions to government operations since systems and records are largely paper-based



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**Essential 5:** Assess the safety of all schools and health facilities and upgrade these as necessary.

Average score = 3.8



### Key findings

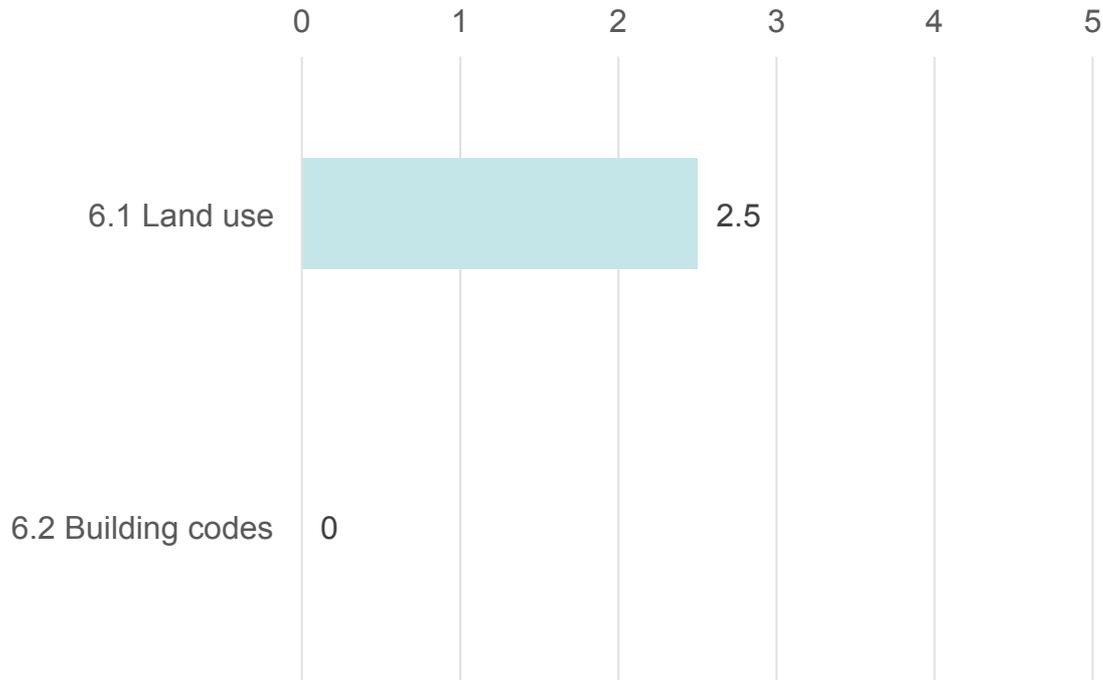
- At least two schools built facilities in an erosion-prone area in past year
- No loss of teaching days due to weather-related events during the last few years
- Critical education data routinely saved at provincial and national levels, able to be accessed post-disaster
- No hospital beds unavailable under most probable disaster scenario and 6-bed intensive care unit was fully operational during most recent category 4 cyclone
- Critical health data are routinely transferred from district level to provincial and central government levels where they can be accessed post-disaster



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**Essential 6:** Apply and enforce realistic, risk compliant building regulations and land use planning principles. Identify safe land for low-income citizens and develop upgrading of informal settlements, wherever feasible.

Average score = 1.3



### Key findings

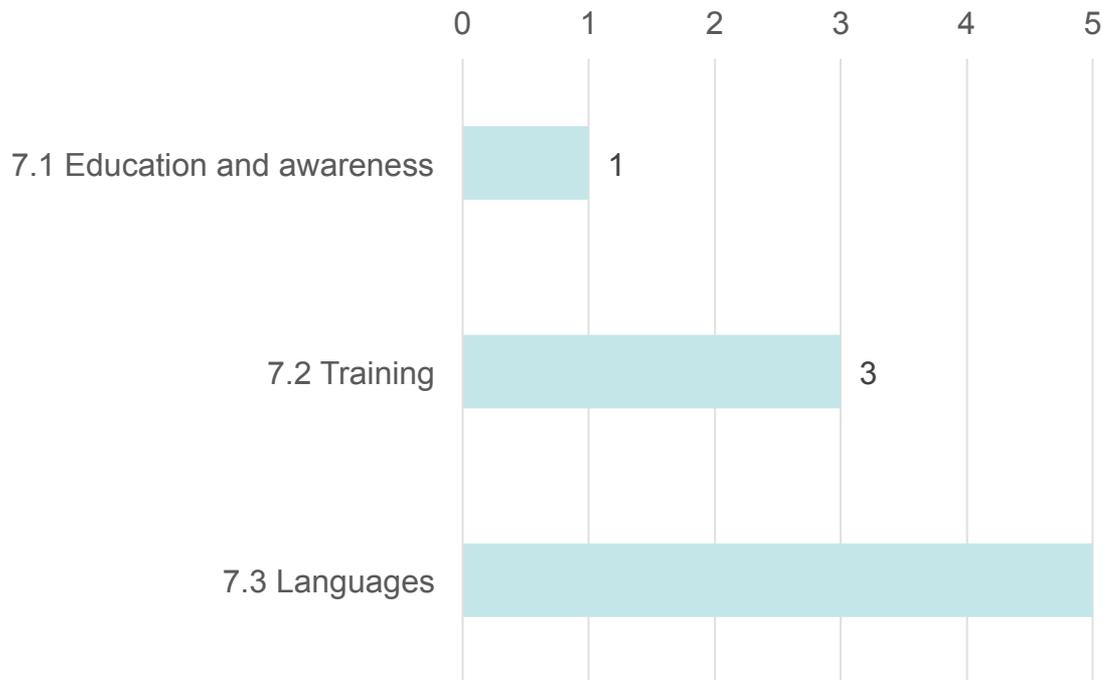
- Pemba is working toward establishing a structural plan for city, but it has not yet been finalized
- Land use enforcement mechanisms are weak, but will have a stronger legal basis once structural plan is approved
- 3.3% of the population is at risk of being displaced due to floods or cyclones based on INGC estimates
- Building codes do not take into account extreme weather events and may not be applied consistently: 50% of structures are at risk of damage based on location in informal and/or high risk areas



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**Essential 7:** Ensure education programs and training on disaster risk reduction are in place in schools and local communities.

Average score = 3



### Key findings

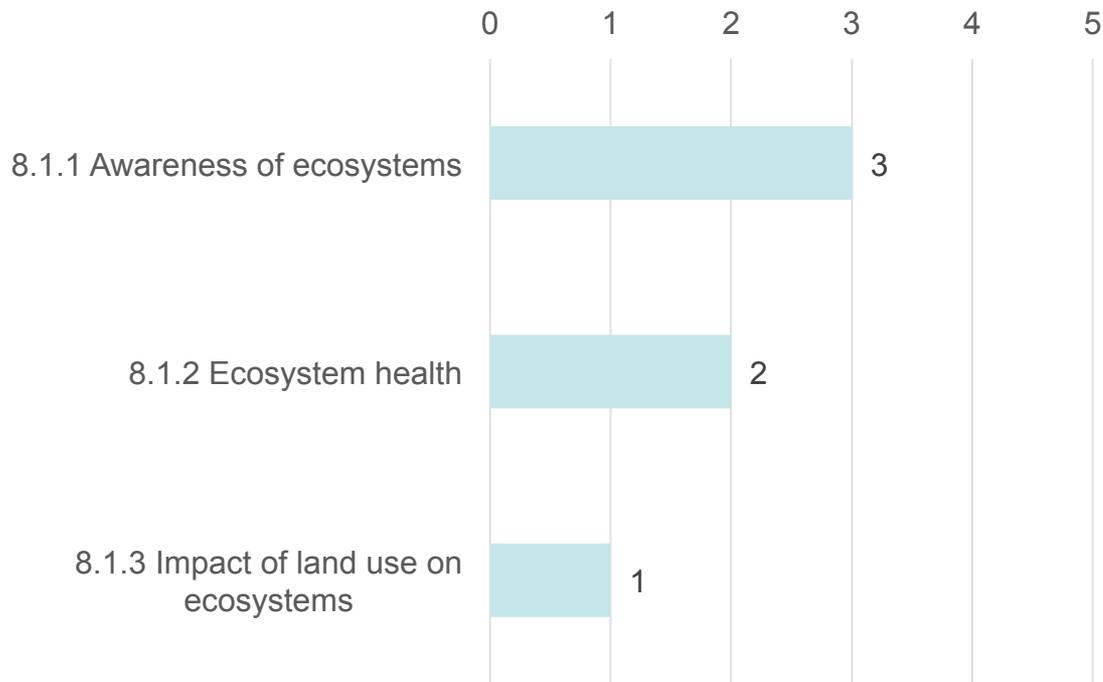
- Efforts to educate general public and increase awareness on disaster risk reduction and disaster resilience are ad-hoc
- Training on disaster preparedness is provided by INGC and Red Cross, but not available in schools and no disaster preparedness curriculum exists
- Provincial INGC staff and other key officials participate in disaster response training annually
- Training and messages are delivered in Portuguese and local languages, providing critical information to all residents



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**Essential 8:** Protect ecosystems and natural buffers to mitigate floods, storm surges and other hazards to which your city may be vulnerable. Adapt to climate change by building on good risk reduction practices.

Average score = 2



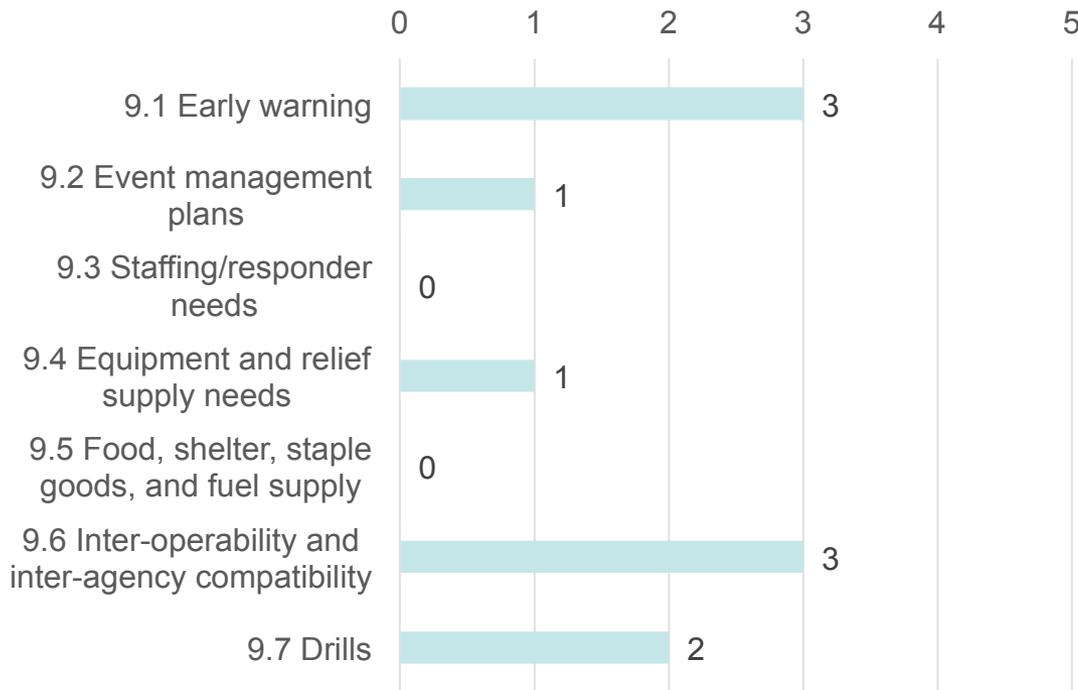
### Key findings

- Critical ecosystems identified by local environmental institutions are sand dunes, coral reefs, mangroves, and regional forest and water tables, but no real attempt to monitor ecosystem health over time
- Urban development has contributed to severe degradation of mangroves and wetlands and climate change will affect coral reefs in near future
- No development or land use plans to control urban growth; MICOA developed an environmental management plan for city in 2013, but awareness and implementation of plan appears to be limited



**Essential 9:** Install early warning systems and emergency management capacities in your city and hold regular public preparedness drills.

Average score = 1.4



Key findings

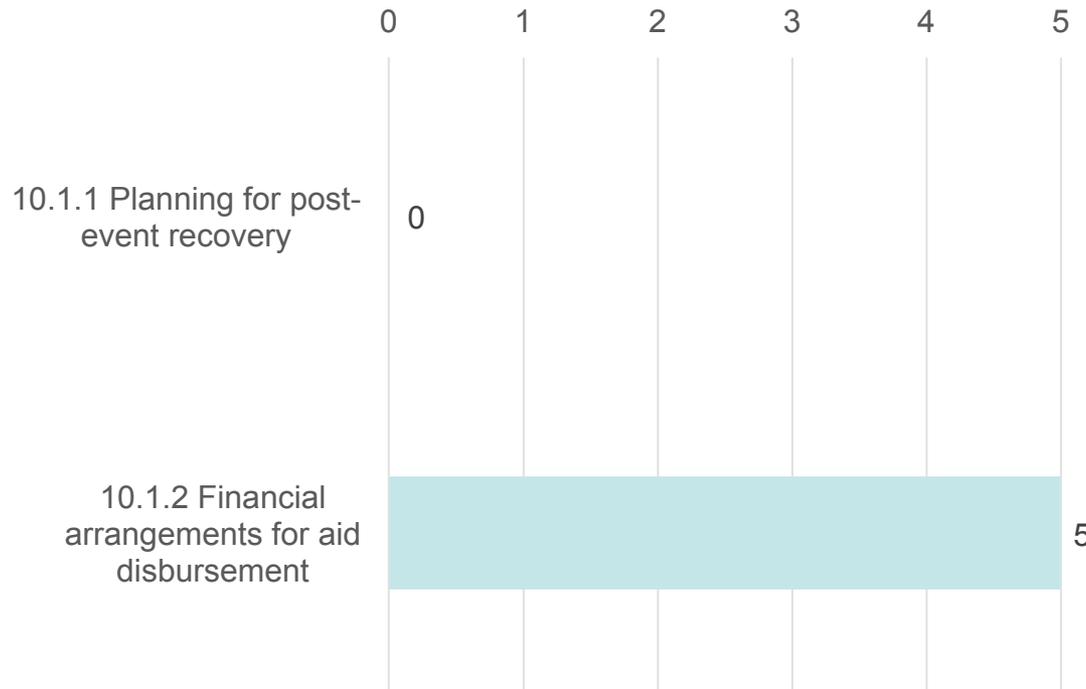
- Early warning system exists (primarily for cyclones) but no data on reach and effectiveness
- Provincial Contingency Plan for 2014/15 provides some information needed for emergency response but lacks details on roles, responsibilities, and resources at the city level
- Available resources are generally insufficient to cover expected needs (or are unknown given lack of detail in contingency plan)
- Inter-agency coordination was tested during Cyclone Hellen in March 2014, but roles are not documented and there are no plans to further test or improve coordination



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**Essential 10:** After any disaster, ensure that the needs of the survivors are placed at the center of reconstruction with support for them and their community organizations to design and help implement responses, including rebuilding homes and livelihoods.

Average score = 2.5



Key findings

- Specific recovery plans are not drafted in advance of disasters
- INGC's Office for Coordination of Reconstruction, Ministry of Planning and Development, Ministry of Public Works, and Ministry of Finance play roles in post-event recovery
- Mozambique has more than a decade of experience managing donor funds for post-disaster reconstruction
- e-SISTAFE public financial management system ensures transparency in use of funds



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# Appendices

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## List of individuals interviewed

### Local Government Stakeholders

Administração de Infraestruturas de Água e Saneamento: Ruben Cardozo  
Conselho Municipal da Cidade de Pemba: Armando Supeta, Manuel Ingoka  
Direcção Provincial de Saúde: Soazinha Paula Agostinho,  
Direcção Provincial de Coordenação de Acção Ambiental: Chefe do Dept. de Ordenamento Territorial Edu Marques; Chefe do Dept. Recursos Humanos Lucas Ledman; Departamento de Avaliação e Gestão Ambiental Mario Parina; Departamento de Educação Ambiental e Género Tiago Pedro  
Electricidade de Moçambique: Helder dos Saimo  
Fundo de Investimento e Património de Abastecimento de Água: Emidio Francisco  
Instituto Nacional de Meteorologia: Hipolito Cardoso  
Instituto Nacional de Gestão de Calamidades: Elizete Manuel  
MCEL, Director de Marketing: Dr. Almeida  
MCEL, Director Regional Norte: Zita Gomes  
Porto de Pemba, Director Cristino de Oliveira,  
Projecto CCA: Representante Esteveo Conjo

Vereação de Area de Saneamento: Zaide Abubacar  
Vereação de Educação e Cultura: Chande Bonzure,  
Vereação de Finanças: Minoz Hassan  
Vereação de Saúde: Miguel Muaziua  
Vereação de Urbanização: Marques Naba,

### National Government Stakeholders

Conselho Nacional para o Desenvolvimento Sustentável (CONDES):  
Ing. Celestino Salencia, Dr. Isidro Fote  
Ministério da Planificação e Desenvolvimento (MPD): Julio Fillimone  
Ministério para a Coordenação da Acção Ambiental (MICOA): Dr. Wetela John  
Instituto Nacional de Gestão de Calamidades (INGC): Ana Cristina Joao Manuel, Casimiro dos Santos Teresa Abreu, Joao Tiago Meneses Machado Ribeiro,  
United Nations Development Programme (UNDP): Manuela Muinga, Nadia Vaz



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Peter Walker et. al., International Dialogue on Strengthening Partnership in Disaster Response: Bridging National and International Support - Background Paper 3 Best Practice Experience at the National Level, Tufts University, September 2011.

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