Skill and knowledge gaps in Climate Change Adaptation- A case of Sri Lanka

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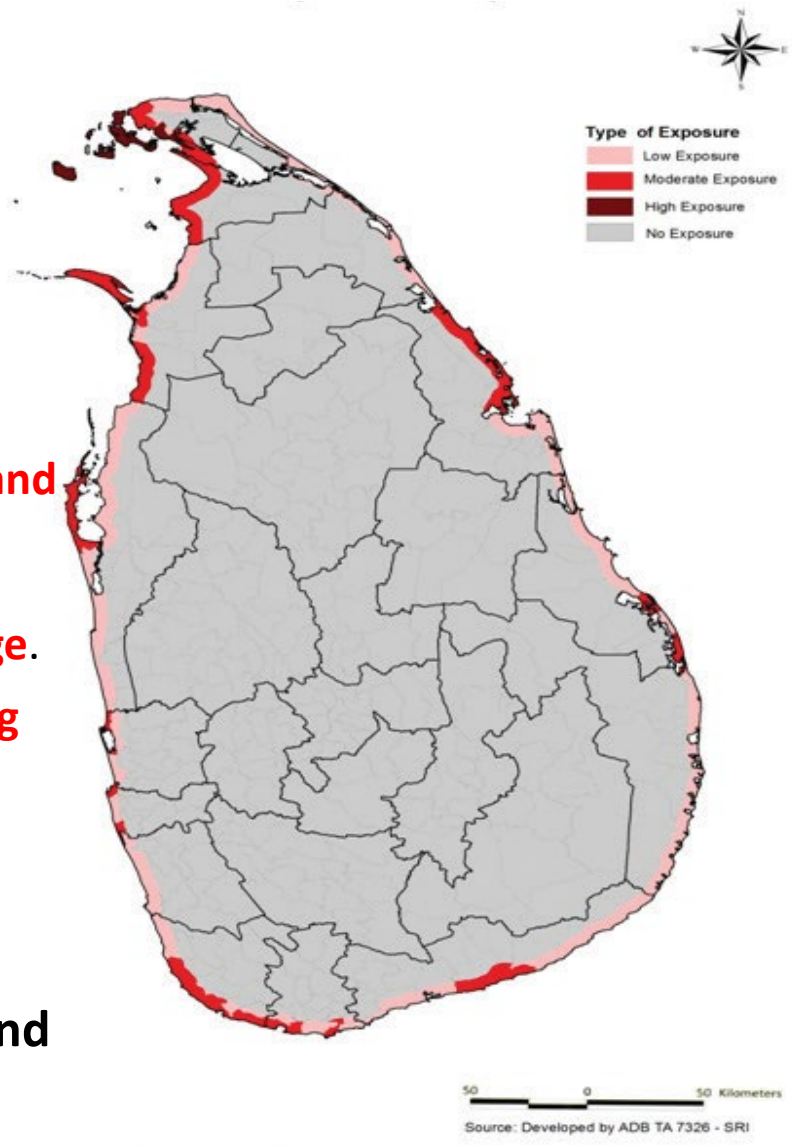
Introduction

- **Secretary General of the United Nations Antonnio Gueterres** cautioned that **global emissions are expected to increase by 14%** in the next decade and it would create catastrophic events.
- **Coastal areas are more vulnerable** because they are affected by the **Sea-Level Rise (SLR)** which accelerates **coastal erosion and inundates coastal regions.** Impacts associated with SLR include the **salinity of coastal groundwater, increased flooding and damage to infrastructure, and damage to coastal ecosystems** (IPCC, 2018).
- **Sri Lanka** is an island surrounded by the Indian Ocean and located at the tip of the Indian Subcontinent. As a tropical nation, it **is extremely vulnerable to climate change**.
- According to the Global Climate Risk Index 2019, **Sri Lanka was ranked second among the counties that are at a higher threat of climate change in 2017**(Eckstein et al., 2018).
- **North and Northeastern coastal belts** have a high risk of inundation
- **Built environment in the coastal** areas is at a greater risk of climate change.
- **Thus, it is vital to implement adaptation measures to reduce the damage and costs.**



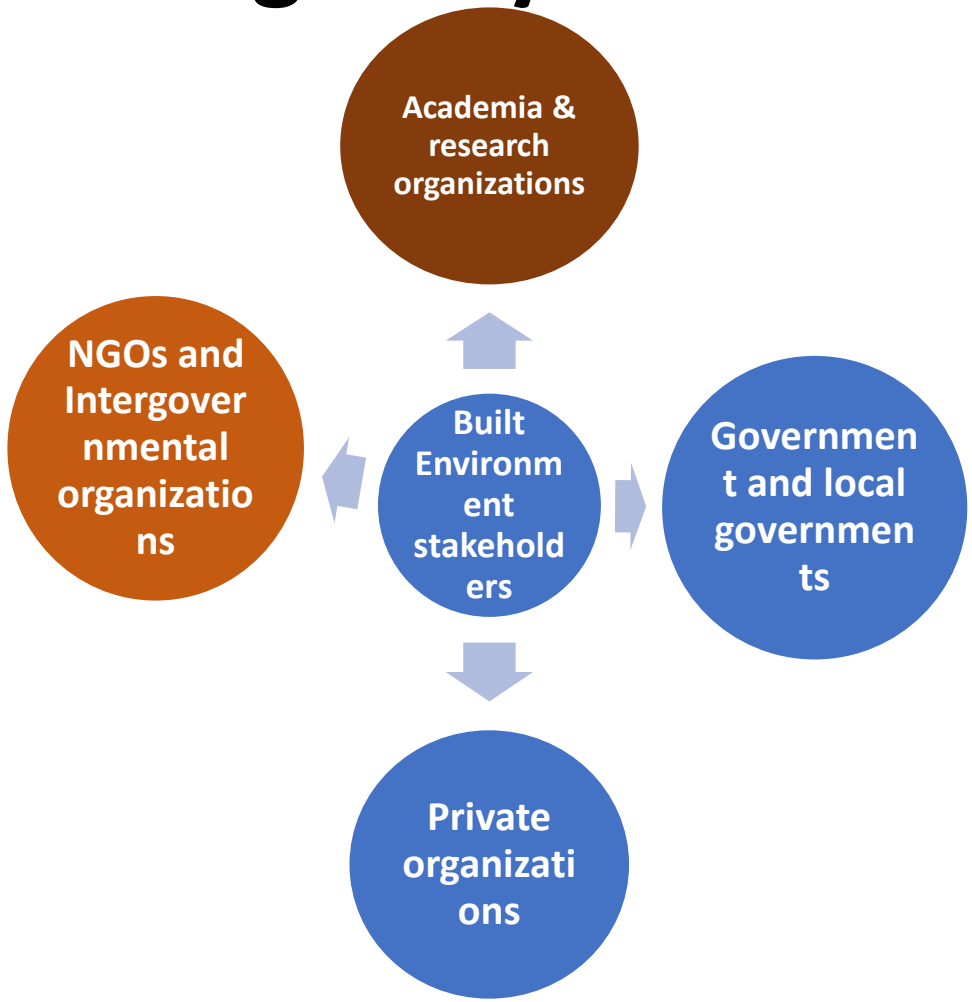
Objectives

- (a)identify key built environment stakeholders in Sri Lanka
- (b) identify key challenges faced
- (c) identify key skill and knowledge gaps that hinder CCA
- (d) propose a competency framework to address the said gaps.

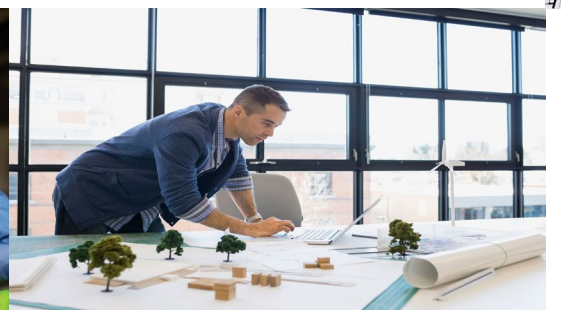
Methodology

Data Types	Data Collection Types	Sampling Method for Primary Data Collection	Analysis methods
Primary Data	**Semi Structured Interviews**	**40 respondents**	**Qualitative Analysis Methods** **1. Thematic Analysis Method**
		1. Government and local government(12 respondents)	
		2. Private organizations(4 respondents)	
		3. Academia and Research Institutions(12 respondents)	
		4.Community organizations(6 respondents)	
		5. Nongovernmental and intergovernmental organizations(6 respondents)	
Secondary Data	**Literature Review**		

Findings: key built environment stakeholders in Sri Lanka



Built Environment Professionals	
Engineers	Sociologists
Architects	Economists
Town and Country Planners	Geographers
Interior Designers	Geologists
Quantity Surveyors	



Findings :Key challenges (Government Sector)

Challenges	Reasons	Suggestions
1. Lack of dedicated financial assistance programmes to implement climate change adaptation and mitigation measures by the government 2. Neglecting climate change related legislation and policies (e.g. NBRO Act, UDA Act. National Environment Act and etc.) by officials and the public. 3. Lack of awareness and knowledge on climate change adaptation and mitigation among government officials and the public 4. Lack of coordination among government agencies (National, Provincial and Local Level).	1. Lack of political will to introduce government funded financial assistance programmes. 2. Non-existence of an agency with legal provisions to enforce climate change legislation. 3. Lack of willingness of officials and the public to improve understanding on climate change. 4. Lack of opportunities available to officials and the public to obtain knowledge on climate change. 5. Interference made by politicians when attempting to implement adaptation strategies (e.g. filling of wetlands, encroachment, illegal constructions, etc.). 6. Ignorance of government officials at different levels.	1. Taking measures to improve the awareness of the political leadership on the importance of funding climate change adaptation initiatives 2. Increasing the opportunities available for officials and the public to obtain greater awareness on climate change. 3. Introducing mechanisms to ensure data sharing among agencies and officials at different levels in the government service 4. Assigning legal provisions to an existing organization to enforce legislation relevant to climate change 5. Building capacities of agencies to independently source and apply for global funding and networking opportunities.

Findings :Key challenges (Academia & Research organizations)

Challenges	Reasons	Suggestions
1. Lack of local funding opportunities to conduct research 2. Reluctance of organizations engaged in climate change management activities to share data with academics and researchers. 3. Minimal support extended by government agencies to researchers in terms of granting approvals, participation and etc. 4. Lack of opportunities to engage in research activities. 5. Lack of academics and researchers that are well trained in areas of climate change adaptation and mitigation.	1. Lack of significance given to the allocation of government funds to encourage research activities. 2. Lack of comprehension among government agencies responsible for climate change regarding the significance of conducting research activities to counter climate change through evidence-based initiatives 3. Restrictive regulations and policies on data sharing and long processes of obtaining approvals 4. Difficulties experienced by government officers to communicate in English 5. Prominence is given to teaching over research activities within local universities. 6. Lack of training opportunities available to academics	1. Taking measures to improve the awareness of political and academic leadership on the importance of funding climate change adaptation research initiatives. 2.Increasing the opportunities available to researchers and academics to obtain training on climate change. 3. Introducing mechanisms to ensure ease of data sharing with academics and researchers. 4. Building capacities of academics to independently source and apply for global funding opportunities. 5. Creating an academic environment that encourages research and innovation.

Findings :Key Challenges (NGOs)

Challenges	Reasons	Suggestions
1. Lack of opportunities to contribute towards drafting and amending of national policies	1. Lack of recognition of the valuable contribution that NGOs can make in drafting policies	1. Integration of NGOs and Intergovernmental Organizations in policy formulation
2. Inequitable opportunities granted to different types of non-governmental and intergovernmental organizations to contribute to climate change related activities	2. Special treatment of larger and financially well endowed Intergovernmental Organizations and NGOs	2. Granting equitable access to all types of NGOs and Intergovernmental Organizations to engage in climate change related activities
3. Lack of support extended by governmental organizations to implement climate change adaptation measures	3. Lack of climate change awareness and education of government officials	3. Introducing mechanisms to enhance the capacities of government officers
4. Disturbances caused by pressure groups such as religious leaders, members of armed forces and etc.	4. Lack of a government organization to enforce regulations and legislation relevant to climate change	4. Assigning legal provisions to an existing organization to enforce legislation relevant to climate change
	5. Lack of training opportunities available to academics and government officers	5. Building the capacities of agencies to independently source and apply for global funding and networking opportunities.

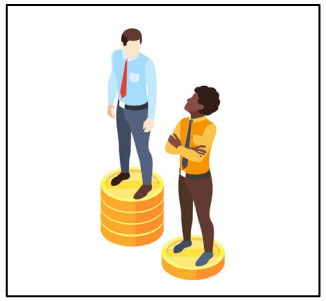
Findings :Key Challenges (Private sector)

Challenges	Reasons	Suggestions
1. Lack of opportunities to contribute to the drafting of national policies on climate change adaptations	1. Lack of recognition of the valuable contribution that private organizations can make in drafting policies	1. Integration of private organizations in policy formulation activities
2. Lack of support extended by governmental organizations to implement climate change adaptation measures	2. Lack of climate change awareness and education of government officials	2. Introducing mechanisms to enhance the capacities of government officers
3 Been viewed as "cash cows"- exerts significant pressure on the organization	3. Lack of funding opportunities available to government officers	3. Building capacities of government agencies to independently source and apply for global funding and networking opportunities.

Findings :Key Challenges (Community Level Organizations)

Challenges	Reasons	Suggestions
1. Lack of opportunities to contribute towards drafting and amending national policies 2. Lack of support extended by governmental organizations to implement climate change adaptation measures locally 3. Decline in the participation of community members in the implementation of programmes	1. Lack of recognition of the valuable contribution that community level organizations can make in policy formulation 2. Lack of climate change awareness and education among community members 3. Busy lifestyle of community members	1. Integration of community level organizations in policy formulation 2. Introducing mechanisms to enhance the capacities of members of community level organizations 3. Building capacities of government officials and broadening their comprehension regarding the importance of multisectoral partnerships and collaborations

Findings: Personal Challenges

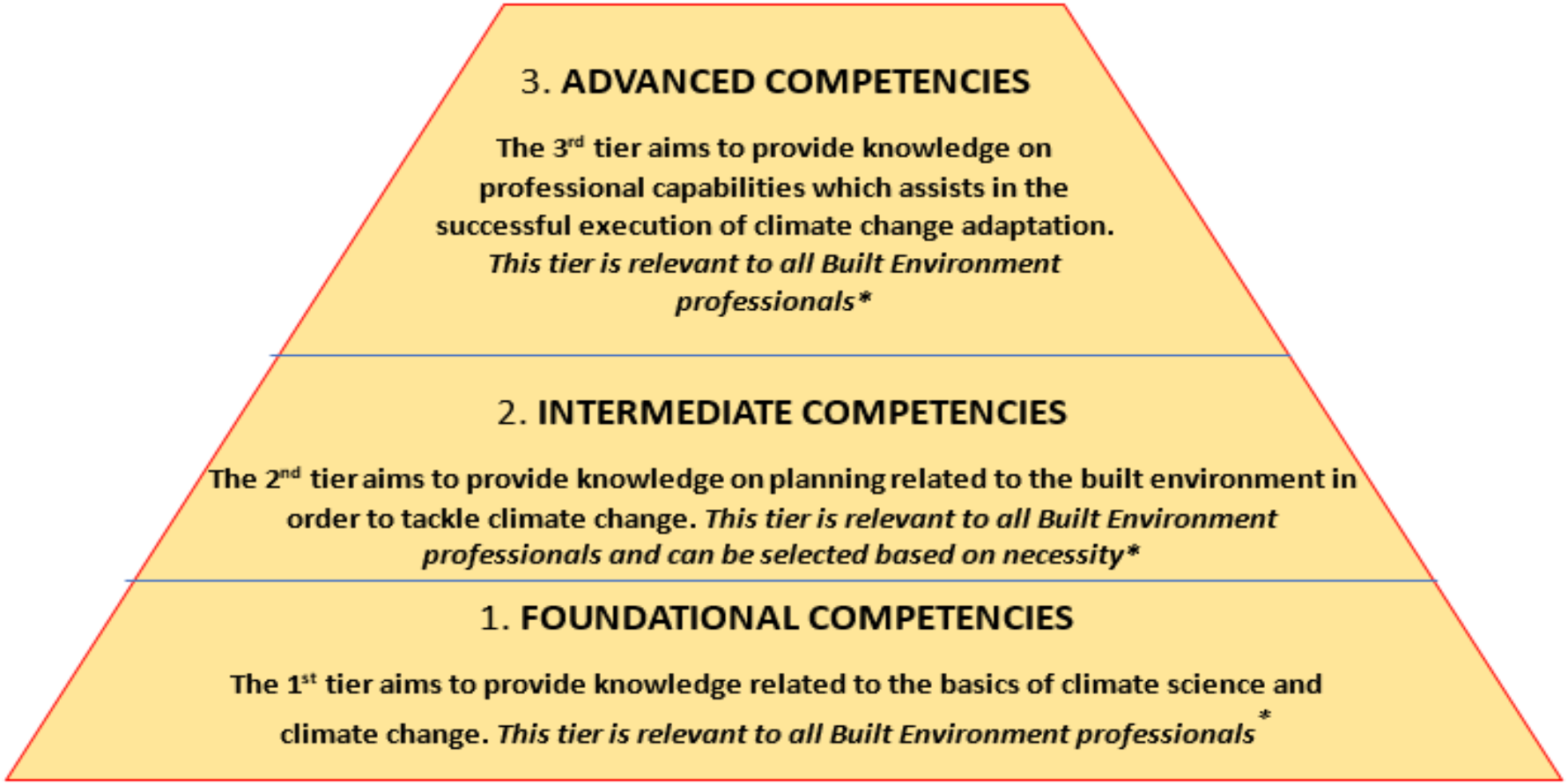


- Complications created by **Bureaucratic Red Tape**
  (in recruitment, promotions, transfers, funding and etc.)
- Lack of **resources**
  (office space, transport, equipment and etc.)
- **Uncompetitive and inadequate remuneration** in the government sector
  (compared to the private sector, causes Brain Drain)
- **Lack of knowledge, skills and training** opportunities
  (proposal writing, CPD courses, information technology and etc.)
- Political **interference**
  (difficulties in enforcing legislation, personal threats and etc.)

Findings: Skills and knowledge gaps

Skill gaps	Knowledge gaps
Communication skills (Negotiation skills, conveying decisions etc.)	**Application of theoretical knowledge practically or vice versa**
Technical skills (computer modelling, mapping, programming and etc.)	**Green building concepts** Radiant floors/Gray water recycling/Solar power/energy efficient window systems/municipal waste management
Language skills (English language proficiency)	**Climate change, Mitigation and adaptation related knowledge** Climate financing, Sea level rise, global warming, green house effect, heat island effect, alternation of ocean currents/difference between adaptation and mitigation and etc.
Integrated working skills (working as a team/group, team management, decision making etc.)	**Research and investigation** ethics/research methodology, sample selection, data collection methods and techniques, data analysis /analytical tools/ data presentation/ academic writing, and etc.
	Localization of mitigation and adaptation measures and strategies
	Legislation, policies, national plans on climate change

Findings: BEACON competency framework



Findings: BEACON competency framework

- **Foundational Competencies**
  - Understanding the basics of climate science and climate change
  - Using new trends and predictions on climate change adaptation
  - Understanding climate change mitigation and adaptation
  - Identifying stakeholders (Actors) in climate change adaptation and mitigation and their responsibilities
  - Understanding the built environment and its relationship to climate change

- **Intermediate Competencies**
  - Understanding the Role of built environment professionals to tackle climate change
  - Understanding Environment-friendly planning
  - Understanding disaster risk reduction in the construction industry
  - Understanding development planning in different contexts
  - Understanding household approaches in climate change adaptation
  - Understanding how construction and facilities management address climate change
  - Understanding Planning in coastal contexts

- **Advanced Competencies**
  - Using research methods in climate research
  - Using technical tools in climate change adaptation
  - Understanding the environmental, social, financial, and governance phenomenon in climate change adaptation
  - Understanding the communication strategies in climate change adaptation
  - Understanding the importance of human resource management in CCA

Conclusion

- Therefore, it is important to reduce the key challenges, such as **bureaucratic red tape, lack of resources, uncompetitive and inadequate remuneration in the state sector, lack of training opportunities, and political interference** that built environment stakeholders face either institutionally and personally.
- Also it is **vital to enhance the knowledge and skill gaps of built environment professionals** regarding climate change adaptation. The **proposed BEACON competency framework** would **cover those knowledge and skill gaps.**

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Thank you