BASIEC: A coastal climate service framework for community-based adaptation to rising sea-levels

*BASIEC- Building Adaptive capacity to Sea-level rise through Information, Education and Communication*

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1. INTRODUCTION

Facts

• Paris Agreement – Global Average Temperature-Below 2 Degree Celsius
• Even GHG stabilized – thermal expansion and melting of glacier happens
• Sea Level Rise (climate induced rising sea-levels, intensified storm surges, frequent cyclones, extreme flood etc.)
  • IPCC AR5 0.55m to 0.82 m Global SLR Projections
• Low-lying coastal regions, resources, infrastructures, people at risk
• Low-lying coastal regions, resources, infrastructures, people at risk
  • Coastal communities are highly vulnerable
• Adaptation to SLR is one of the best strategies to respond to SLR
  • Community-Based Adaptation (CBA)
• Awareness creation and capacity building to SLR is essential
• Climate Services is one of the powerful mechanism to address
2. RESEARCH QUESTIONS AND OBJECTIVES

Research Questions:

(1) What services do the coastal communities require?

(2) How these services need to be delivered?

(3) What are all the roles of climate services that can help in building capacities of coastal communities and involve them in CBA decision-making process?

Objectives:

(1) To review on the need for climate services and coastal communities

(2) To develop a theoretical and conceptual framework to create awareness and capacity building of coastal communities to SLR through climate services

(3) To make an intervention on policy planning to climate change and SLR risk communication, capacity building and decision-making.
3. RATIONALE AND GUIDING PRINCIPLE

- UNFCCC (United Nations Framework Convention on Climate Change)
- GFCS (Global Framework for Climate Services)

- Article 6 (Promotion of education, training and public awareness on climate change)
- Article 10 (Kyoto Protocol: Strengthening of research capacity, education and training of personnel and institutional strengthening in developing countries)
- Article 11 (Paris Agreement: Paris Committee on Capacity Building (PCCB))
- Article 12 (Paris Agreement: Promotion of education and public awareness)
- Article 13 (Paris Agreement: Capacity Building Initiative on Transparency)

- BASIEC (Building capacities for Adaptation to Sea-level rise through Information, Education and Communication for coastal communities)

- (i) Climate Observations
- (ii) Climate Research, Modeling and Prediction
- (iii) Climate Service Information System (CSIS)
- (iv) Climate User Interface Program (CUIP)
- (v) Capacity Building / Development

- (i) Development of Institutions
- (ii) Development of Infrastructures
- (iii) Development of Human Resources

➢ UNFCCC (United Nations Framework Convention on Climate Change)
➢ GFCS (Global Framework for Climate Services)
4. METHODOLOGY

- **Literature Review**
  - Source Keywords: Climate change, sea-level rise, capacity building, awareness, community-based adaptation
  - Collection of Primary and Secondary Source of Literature

- **Document Analysis**
  - Journals, Books, Documents, Reports other grey literature etc
  - Key word search techniques

- **Policy Recomm.**
  - UNFCCC (Article 6, 10, 11, 12, 13)
  - GFCS (Capacity Building / Development, Development of Human Resources)

- **Framework Construct.**
5. BASIEC FRAMEWORK

- **BASIEC** – It is a coastal **climate service** framework for CBA to SLR.

- **BASIEC - Building capacities for Adaptation to Sea-level rise through Information, Education and Communication for coastal communities.**

- The approach integrates **theoretical and empirical knowledge** of the factors contributing to CBA to SLR for translating those **concepts into practice**.

- **SLR risk Information, SLR risk Communication and SLR risk Education** are the three pillars of this framework.

- It acts as a starting point and simple guidelines for policy planners, decision makers, researchers, practitioners etc., **to create awareness and to build capacities** of communities at the local to address SLR.
5.1 SLR Risk Information

- The increase in demand for tailored climate information and climate data to inform preparedness strategies for risk reduction.

- Three types of data: historical climate data, real-time climate/weather data, predicted/forecasted climate data.

- Climate and weather data on local scale, site specific, time specific, quality and reliability.

- Availability and accessibility of climate/weather information and climate/weather data.

- **BASIEC outlines the following data and info are required to address SLR-CBA**
  1. Elevation data of the study region from the mean sea-level;
  2. Data on regional and local sea-level trend;
  3. Information on exposure and vulnerability of the region
  4. Data and information on future projections of local sea level;
  5. Information on predicted impacts of SLR risk;
  6. Information on vulnerable ecosystems, communities/population, infrastructures etc SLR risk;
  7. Information on list of SLR risk response strategies
  8. Information on list of existing coastal management policies and interventions and others.
5.2 SLR Risk Communication

- Making scientific research on **SLR accessible and useful to diverse audiences** is crucial yet important.

- **Risk communication**: to provide information about hazards through a variety of channels among themselves or to different audiences for the purpose of influencing the recipients to apply the information and take appropriate action.

- **Climate services**: Communicating and disseminating risk information - translating climate/SLR science

- **Customized products** such as projections, forecasts, information, trends, economic analysis, assessments, counseling on best practices, development and evaluation of solution, and other services in relation to climate.

- **BASIEC outlines some of the following communication mediums**
  1. Word of mouth (e.g. one to one comm., public speaking, etc.);
  2. Group discussion;
  3. Scientific materials (e.g. maps, graphs, charts, tables, posters etc.);
  4. Print media (e.g. brochures, posters, magazines, newspapers, etc.);
  5. Electronic media (e.g. ppt, videos, television, community radios, etc);
  6. Social media (Website, blogs, facebook, twitter, etc);
  7. Theatre (e.g. drama, street play, movies, puppet show, etc);
  8. Art (e.g. paintings, storytelling, cartoons, etc.) and others.
5.3 SLR Risk Education

- “Climate Literacy” among people, encourage changes in their attitudes and behavior and helps them adapt to climate change-related trends.

- Climate change /SLR education demands a focus on the kind of learning, critical and creative thinking and capacity buildings that will enable to engage with the information, inquire, understand, ask critical questions and take what they determine are appropriate actions.

- Informal learning institutions along with formal education systems.

- Integrating local and scientific knowledge – This approaches often share the use of participatory methods, employment of iterative strategies to support learning and feedback, attention to temporal and spatial scales, and incorporation of values into decision processes.

- BASIEC recommends some of the following education methods
  1. Citizen science;
  2. Conferences and symposiums;
  3. Formal educational;
  4. Workshops;
  5. Training programs;
  6. Field visits;
  7. Exhibitions;
  8. Participatory techniques and others.
Architecture of the BASIEC framework
### 6. SWOT ANALYSIS OF BASIEC FRAMEWORK

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<tr>
<th><strong>Strengths</strong></th>
<th><strong>Weakness</strong></th>
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| ➢ Specific to SLR and coastal climate  
➢ Integrate different dimensions of SLR  
➢ Three distinct pillars (Information, Education and Communication)  
➢ Exclusive for SLR risk awareness and CBA  
➢ Simple, user friendly and globally applicable | ➢ Difficulties in delineating to SLR and coast  
➢ Availability of expertise on the subject-SLR  
➢ Lack or unavailability of local SLR information  
➢ Obscurity on availability and accessibility of communication and educational aids  
➢ Challenges in working with communities |

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<tr>
<th><strong>Threats</strong></th>
<th><strong>Opportunities</strong></th>
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| ➢ Manipulation of SLR risk information and data  
➢ SLR Information increase complexity/confusion  
➢ Chances of wrong or miscommunication of SLR information and translation  
➢ Evaluation on the application of BASIEC is majorly a qualitative  
➢ Influence of other framework may hinder BASIEC | ➢ To upscale the application of the BASIEC  
➢ To develop a formal SLR risk communication education curriculum  
➢ To develop a web-based online platform  
➢ To develop smart phone based app  
➢ Interventions of BASIEC in SLR policies |
7. APPLICATIONS OF BASIEC FRAMEWORK

(i) **SLR awareness creation:**
   - Ability to directly know, perceive, to feel or to be cognizant of SLR and coastal events.
   - Information and communication perspectives of BASIEC plays a key role in this context.
   - Aimed that the improvements in the level of climate change (SLR) awareness can lead to better adaptation outcomes.

(ii) **SLR capacity building:**
   - Process by which coastal stakeholders obtain information, improve knowledge, identifying tools and methods, and retain the skills and other resources needed to respond to SLR
   - Education dimension of BASIEC plays a key role in this context
   - Aimed to cope with the impacts, including the possibilities to prevent or reduce impacts via adaptation measures.

(iii) **SLR policy interventions / implications:**
   - BASIEC responds to UNFCCC call on climate action and GFCS climate services - to inform, to educate, to improve awareness, to develop an understanding of people about climate change (SLR).
   - Contextualization of BASIEC serves as an important role in educating stakeholders about the importance of considering climate in place-based policy decisions.
   - Provides platform for National/Federal governments and also State/Local Governments to take climate action at the community-level using climate services to build the capacity of the communities to SLR.
8. A CASE STUDY: ENNORE, CHENNAI, INDIA

Photographs sources: Authors' Original Photographs
9. CONCLUSION

- Climate change-SLR-Coastal communities
- Adaptation (Community-Based Adaptation) to SLR
- Climate Services
- UNFCCC and GFCS
- BASIEC Framework
- SLR risk information, SLR risk communication, SLR risk education
- SLR awareness creation, SLR capacity building, SLR policy implications
- Strength, Weakness, Opportunities and Threats of BASIEC
- BASIEC implementation and scaling up
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11. REFERENCES

12. DISCLAIMER

The manuscript of this framework/ppt has been accepted for publication as a book chapter in Springer’s Handbook of Climate Services and scheduled to publish in the second half of 2019.

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THANK YOU

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