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Climate resilient infrastructure and coastal development

# Topic: Barriers to Reducing Climate Enhanced Disaster Risks in Least Developed Country-Small Islands through Anticipatory Adaptation


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# OUTLINE

- Background to study
- Aims of study
- Why LDC-SIDS?
- Systematic methods/conceptual framework
- Synthesis of key barriers
- Key Conclusions
- Recommendations for policy and practice

# BACKGROUND

- The study is part of a 2 year (2013-2015) research initiative by the International Geosphere Biosphere Program examining the needs of Least Developed Countries particularly in the Asia-Pacific region to global environmental change

- Other countries involved in the study : Bangladesh, Cambodia, Nepal, Myanmar

- It aims to build the capacity of local researchers and promote south-south and north-south partnership and knowledge building

- It aims to produce a set of research papers and policy briefs to inform key decision makers

# AIM

- To synthesise a set of key barriers/constraints to reducing climate risks through adaptation in small islands classified as Least Developed Countries and discuss the process that give rise to these barriers.

- Key questions:
  1. Understand the barriers that gives rise to social vulnerability i.e. dynamic pressures and their root causes
  2. What are the key underlying causes of these barriers
  3. To What extent have these barriers and their associated causes been addressed in formal national adaptation programmes (i.e. those led by Government?)
  4. Do gaps exist between identified barriers and formal programmes?

# WHY SIDS? – CHARACTERISTICS & VULNERABILITY TO CLIMATE CHANGE

## LDC SIDS

- Low income
- Physical size e.g. Small and low lying
- Proneness to natural disasters
- Dependency on international trade
- Low adaptive capacity

Tarawa Atoll - Kiribati

# LDC-SIDS IN THE STUDY

Characteristics of the study Islands classified as LDC-SIDS (Global Adaptation Institute, 2011; UNDP, 2012).

| Country | Population | Human Development Index (UNDP ranking) | Vulnerability Index (GAI ranking) |
|---|---|---|---|
| Pacific Islands | | | |
| Samoa | 187,820 | 0.702 (96) | 0.428 (127) |
| Solomon Islands | 561,000 | 0.530 (143) | 0.514 (164) |
| Timor-Leste | 1,066,409 | 0.576 (134) | 0.517 (165) |
| Tuvalu | 11,232 | Unavailable | Unavailable |
| Vanuatu | 264,652 | 0.626 (124) | 0.429 (128) |
| Kiribati | 106,461 | 0.629 (121) | Unavailable |
| African Islands | | | |
| Comoros | 724,300 | 0.429 (169) | 0.433 (129) |
| Guinea-Bissau | 1,704,000 | 0.364 (176) | 0.510 (161) |
| São Tomé and Príncipe | 187,356 | 0.525 (144) | 0.480 (143) |
| Caribbean Islands | | | |
| Haiti | 10,413,211 | 0.456 (161) | 0.512 (162) |

# Systematic REVIEW methods

- The systematic review methods allowed for an explicit and reproducible literature search and a critical appraisal of past studies between 2003-2013

- Started with establishment of a set of inclusion and exclusion criteria for screening both peer-reviewed 'academic' and non-peer reviewed 'grey literature' publications to include in the study.

- Inclusion criteria related to:
  - exposure unit (e.g., climate change impacts),
  - population (e.g., LDC-SIDS),
  - intervention (e.g.adaptation),
  - comparator (household versus community spatial scale)
  - and outcome (e.g., social barrier or constraint to adaptation).
- Exclusion criteria related to:
  - the language of the articles,
  - biophysical barriers (e.g., coastal erosion), time frame of publications (i.e., 2003-2013) and
  - type of publication (e.g., document's origins cannot be found).

- Sixty eight articles were analysed, majority from the Pacific (44), SIDS in general (12), African Islands (4), Caribbean Islands (4), LDCs (3)

# ANALYSIS: SYNTHESIS OF BARRIERS

- The final 68 selected articles undertook a narrative based, qualitative thematic analysis guided by a typology of barriers to adaptation which was informed by the study's theoretical framework.
- The typology included cultural, cognitive, governance, technical, financial and other barriers.
- Finally, five individual country NAPAs were analysed to ascertain the extent the barriers identified through the systematic review were being addressed through various interventions.

- <u>Limitations of study:</u>
  Due to time and resource constraints the search for articles was conducted over a short-time frame(three weeks). This precluded the searching of individual journals that may not appear in the included set of academic databases e.g. Open access journals.

# Results & examples

- The most common barrier reported related to governance followed in descending order by, technical, cognitive, cultural, financial and “other” barriers.

- The “other” barrier related to the lack of focus amongst adaptation planning efforts on addressing the root causes driving social vulnerability.

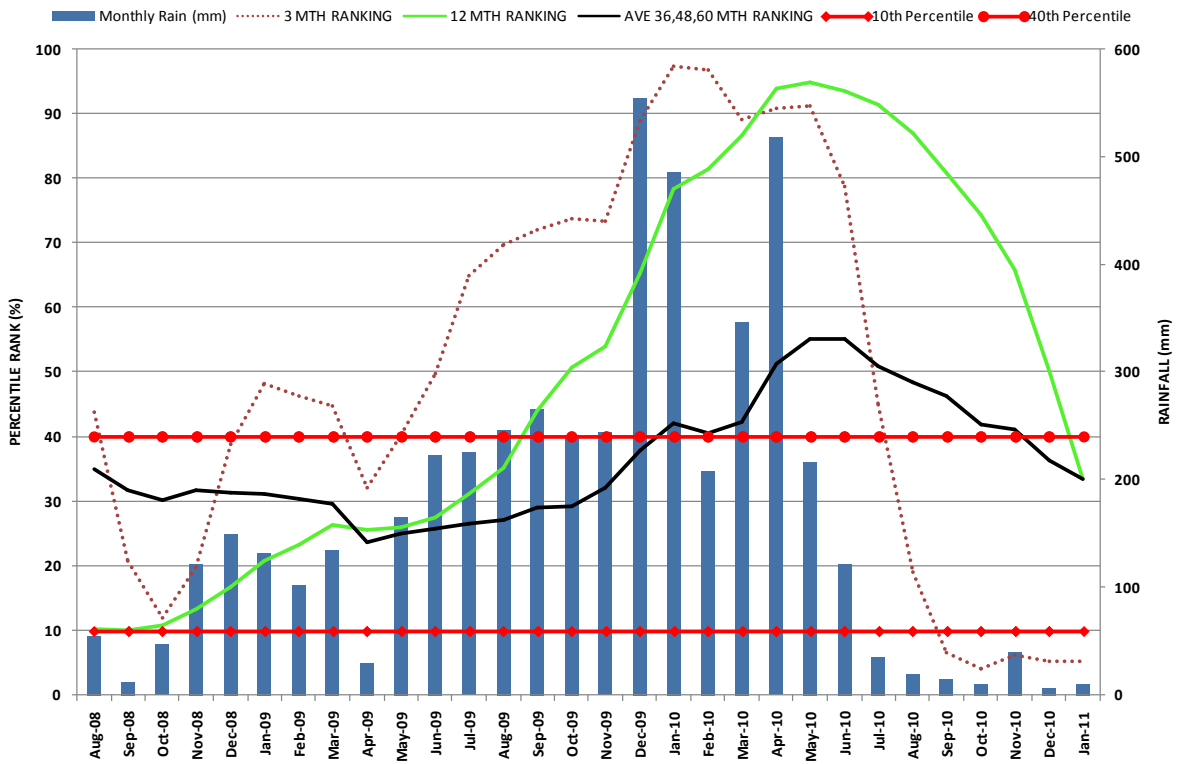
- **Governance** (key barrier)– Limited engagement with communities and Local Councils' meant that their needs for building self- sufficiency were often overlooked in national adaptation initiatives which tended to focus on top-down sectoral (e.g.,water, health, agriculture) adaptation interventions.

Broken down solar pump

Locally designed hand pump

# SYNTHESIS OF BARRIERS (CONT'D)

- **Technical (key barrier)** - limited data available on climate and other biophysical resources (e.g., biodiversity, water resources) as well as the in-country capacity to generate and manage this data within SIDS.




Drought declaration in Kiribati is constrained by non-availability of long term rainfall projection

# SYNTHESIS OF BARRIERS (CONT'D)

- **Financial barriers (key barrier) -**International adaptation funding for LDCs; inadequate, unpredictable, complex to administer and inequitable.

- **Cognitive or subjective barriers (key barrier)** –Vulnerability assessments and adaptation planning had given limited attention to community perceptions of climate risks and the influence of beliefs and values in shaping adaptation decisions.
  - For example, Church belief that God had promised there won't be another flood.

- **Cultural barriers (key barrier)**– refer to processes impeding the totality people's way of life, including the distinctive spiritual, material, intellectual and emotional features through which life continues
  - For example, In the Solomon Islands, erosion of traditional knowledge surrounding gardens and bushfoods precluded families passing this knowledge to the younger generations

# KEY FINDINGS : WHOSE REALITY COUNTS?

- The findings of the systematic review revealed a notable lack of studies on adaptation within African and Caribbean LDC-SIDS. In general, there was **limited academic as well as grey literature being produced by authors from LDC-SIDS** to challenge existing discourses related to adaptation.

- An analysis of five NAPA documents revealed the **lack of focus on the adaptive capacity needs of Local Government or Island Councils and communities was a key barrier** to ensuring success of adaptation interventions.

- The lack of focus on Local Government and community level was exacerbated by international adaptation funding modalities (i.e., through the UNFCCC), which **did little to address root causes that drive vulnerability. These funds were geared at supporting sectoral level adaptation initiatives for vulnerable natural resource sectors** such as water, biodiversity and coastal zones.

- There is a need to recognise the **significance of cultural knowledge and practices in shaping adaptive choices** of communities in SIDS.

# Recommendations for Policy and Practice

QUESTION: Given the long term nature of adaptation programmes, how can **adaptation funding** and donors **help in a way that fosters, respects and sustains the autonomy of recipients, to act on their own motivation?**

- This requires adaptation to be considered first as an issue of equity and justice in which **'adaptation funding' enables vulnerable communities to maintain their basic human rights and cultural dignity i.e. addresses the root causes of vulnerability;**
- donors and implementing partners need to reflect on their own policies and practices and **question the fundamental changes required to occur internally** if they are to meet the distinct cultural and institutional architecture present in SIDS
- **build local research and leadership capacity in SIDS** rather than utilising the skills of international fly-in and out consultants to generate adaptation related knowledge to support donor investments.

# Recommendations for Policy and Practice (contd)

- International funding that moves beyond short-term capacity building workshops and instead **provide sustained financing of both the soft and hard infrastructure required to support in-country data generation**, south-south climate adaptation collaboration networks, and management and dissemination of data, particularly **in local languages**.

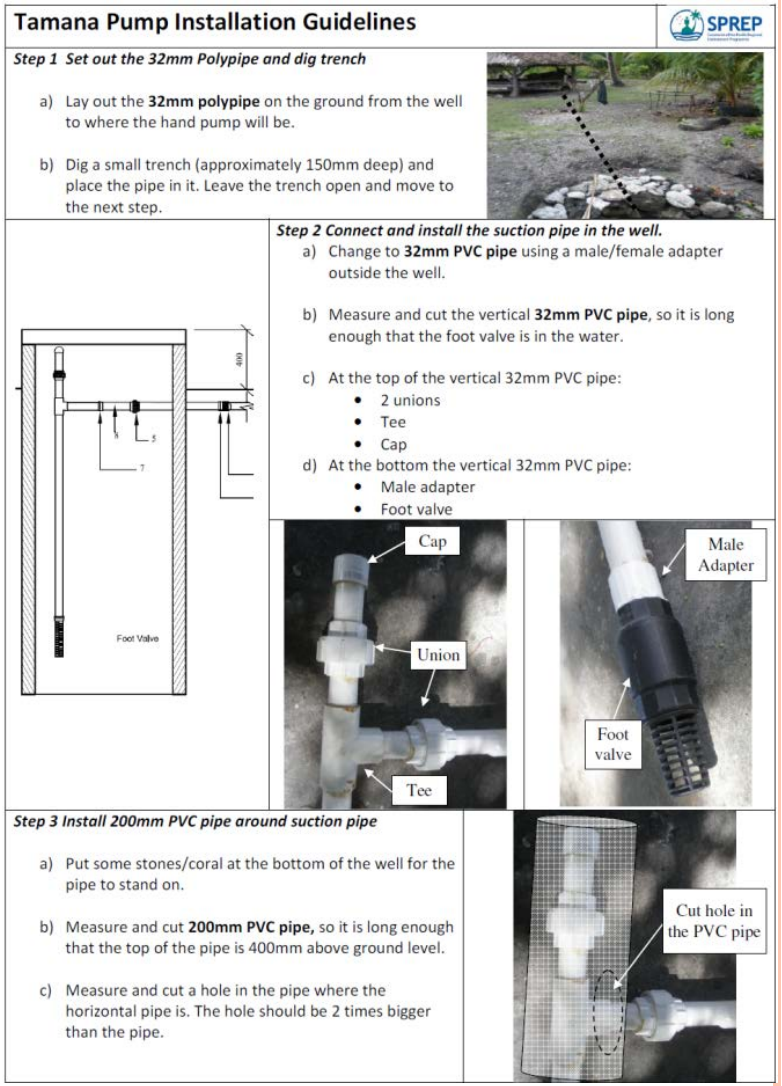
- It requires **policies that enable communities and decision makers in SIDS to question the processes by which they can hold donors accountable** and ensure that adaptation efforts deliver outcomes that SIDS value.

- polici**es and their instruments must challenge the power structures that continue to drive inequalities in the delivery of adaptation interventions.** We must question whose interests these delivery mechanisms serve and who they are desirable for.

- **shift from perceiving communities in SIDS as objects of vulnerability to active agents** and recognise the agency inherent in local culture.

# How can the interventions be more meaningful and appropriate to local communities?

Under the current USAID-SPREP project, a standard design and guideline for the installation of locally invented hand pump is being developed



**Tamana Pump Installation Guidelines**

SPREP

***Step 1 Set out the 32mm Polypipe and dig trench***

a) Lay out the **32mm polypipe** on the ground from the well to where the hand pump will be.

b) Dig a small trench (approximately 150mm deep) and place the pipe in it. Leave the trench open and move to the next step.

***Step 2 Connect and install the suction pipe in the well.***

a) Change to **32mm PVC pipe** using a male/female adapter outside the well.

b) Measure and cut the vertical **32mm PVC pipe**, so it is long enough that the foot valve is in the water.

c) At the top of the vertical 32mm PVC pipe:
- 2 unions
- Tee
- Cap

d) At the bottom the vertical 32mm PVC pipe:
- Male adapter
- Foot valve

Foot Valve

Cap

Union

Tee

Male Adapter

Foot valve

***Step 3 Install 200mm PVC pipe around suction pipe***

a) Put some stones/coral at the bottom of the well for the pipe to stand on.

b) Measure and cut **200mm PVC pipe,** so it is long enough that the top of the pipe is 400mm above ground level.

c) Measure and cut a hole in the pipe where the horizontal pipe is. The hole should be 2 times bigger than the pipe.

Cut hole in the PVC pipe

# KAM RABWA

## THANK YOU

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## Barriers to reducing climate enhanced disaster risks in Least Developed Country-Small Islands through anticipatory adaptation

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ABSTRACT

Small Island Developing States (SIDS) classified as Least Developed Countries (LDCs) are particularly vulnerable to the projected impacts of climate change. Given their particular vulnerabilities, climate adaptation investments are being made through both national and international efforts to build the capacity of various sectors and communities to reduce climate risks and associated disasters. Despite these efforts, reducing climate risks is not free of various challenges and barriers. This paper aims to synthesise a set of critical socio-economic barriers present at various spatial scales that are specific to Least Developed Country SIDS. It also aims to identify the processes that give rise to these barriers. Drawing on theories from natural hazards, a systematic literature review method was adopted to identify and organise the set of barriers by focussing on both academic papers and grey literature. The data revealed a notable lack of studies on adaptation within African and Caribbean LDC-SIDS. In general, there was a paucity of academic as well as grey literature being produced by authors from LDC-SIDS to challenge existing discourses related to adaptation barriers. The most common barriers identified included those related to governance, technical, cognitive and cultural. Three key findings can be drawn from this study in relation to formal adaptation initiatives. Firstly, the lack of focus on the adaptive capacity needs of Local Government or Island Councils and communities was a key barrier to ensure success of adaptation interventions. Secondly, international adaptation funding modalities did little to address root causes of vulnerability or support system transformations. These funds were geared at supporting sectoral level adaptation initiatives for vulnerable natural resource sectors such as water, biodiversity and coastal zones. Thirdly, there is a need to recognise the significance of cultural knowledge and practices in shaping adaptive choices of communities in SIDS.