

POLICY BRIEF

AN INTEGRATED APPROACH TO COMMUNITY ADAPTATION IN SIDS – THE GIVRAPD PROJECT

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CLIMATE CHANGE IMPACTS IN SIDS CONTEXT

Small Island Developing States (SIDS) are amongst the most vulnerable to climate change impacts. This is due to their geographical isolation and exposure to coastal and maritime threats. Such climatic related impacts will exacerbate pre-existing development challenges especially within coastal communities, maritime industries, and in urban clusters. Extreme weather events are already impacting coastal infrastructure and natural resource livelihoods. Projected sea level rise and coastal inundation will affect human well-being and major economic sectors including fisheries, agriculture and tourism. For instance, climatic hazards will influence tourist's perception of recreational amenities and choice of destination regarding heat tolerance and welfare. In addition, changing weather patterns will alter the duration and intensity of seasonal floods and drought and ensuing food production. Other concerns about coral bleaching and loss of fisheries affect seafood production and related industries. Associated with these are institutional adaptation needs in addressing biophysical vulnerability to coastal infrastructure, human settlements, livelihood, and the human capacity to cope and be resilient.

GIVRAPD'S INTEGRATED APPROACH

The Global Islands' Vulnerability Research Adaptation Policy and Development (GIVRAPD) Project is a comparative and interdisciplinary research initiative that addresses the challenges and opportunities



POLICY HIGHLIGHTS

- 7 The high level of climate change vulnerability in SIDS requires an interdisciplinary and multi-stakeholder research partnership that mobilizes knowledge for local action.
- 7 The GIVRAPD project fills this research gap by discerning the various socioeconomic, governance and environmental conditions that shape vulnerability and adaptive capacity within small and medium sized coastal communities. Research foci centre around four policy dimensions: climate science, coastal vulnerability, micro-finance, and governance; all crucial for the practice of adaptation interventions.
- 7 Lessons from four learning sites in the Caribbean (Jamaica and St. Lucia) and SW Indian Ocean (Mauritius and Seychelles) are compelling for potential replication and scaling-out of climate change adaptation best practices in SIDS.

presented by climate change hazards. The project aims to understand the multi-scale socioeconomic, governance and environmental conditions that shape vulnerability and capacity to adapt within small and medium sized coastal communities. The project integrates scientific and local knowledge from comparative 'learning sites' at local, national and regional scales. The sites are located in four SIDS in the Caribbean (St. Lucia and Jamaica) and Indian Ocean (Mauritius and the Seychelles) with potential for scaling-out and scaling-up in SIDS. Through these approaches, the project partners address knowledge gaps, inform practical local adaptation and climate compatible development portfolios, and establish scientific and professional networks for capacity building and leadership training.

RESEARCH COMPONENTS

The project composed of four research components covering climate science, governance, micro-insurance and coastal vulnerability assessments (Fig 1).

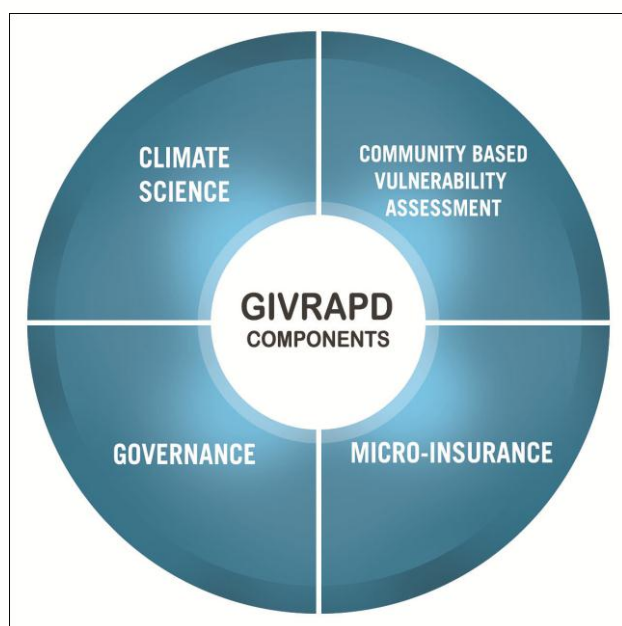


Figure1: GIVRAPD research components in the four learning sites

A community-based vulnerability assessment about coping strategies and resilience attributes was undertaken to nurture local adaptive capacity. Downscaled climate scenarios were used to better understand local community's exposure to climate stimuli (both current and future exposure and sensitivity). This was complemented with coastal mapping tools to ground-truth predicted sea level rise and profile beach characteristics in some of the learning sites.

A governance assessment and participatory stakeholder workshop was conducted to lay the platform for multi-level partnerships and social networks aimed at collective decision-making. Recognising the high social cost to livelihood security and community infrastructure, alternative compensation schemes, notably micro-insurance, was investigated through demand surveys and stakeholder workshops. Insights from this interdisciplinary and collaborative research are available as journal articles, working papers and policy briefs.

1. DOWNSCALING CLIMATE SCENARIOS FOR COASTAL PLANNING

The latest IPCC (2014) projections underscored the high level of vulnerability of SIDS to biophysical coastal processes owing to the 'high ratio of coastal area to land mass'. This makes climate change adaptation a costly and challenging task and a matter of applied policy research. Since the IPCC projections for sea level rise are not spatially uniform, and melting of land-based sea ice are not fully accounted for in previous models, fine-tuned estimates are necessary to account for tropical variations using site specific biophysical assessments.

Using projections by Forbes et al. (2013) that suit local SIDS contexts, field surveys and coastal geomorphological assessments were undertaken using geospatial mapping tools and GIS techniques to obtain shoreline characterization and beach profiles. New sea level rise models in Seychelles, for example, showed how the impact of flooding and water elevations could affect human settlements, critical infrastructure, and beach loss. These research approaches and lessons learned have implications for multi-use coastal zoning, flood buffers, and integrated approaches that combine both hard and soft measures for long-term adaptation needs. The field activities were alongside capacity building and training programs for students and local experts dealing with coastal management and adaptation planning.

2. ASSESSING COASTAL VULNERABILITY FOR COMMUNITY RESILIENCE

Coastal regions are highly dynamic due to the interactivity between terrestrial and marine biogeochemical processes and the wide range of conflicting human activities.

Knowing that sea level rise and coastal flooding are major concern for SIDS, a community-based vulnerability assessment (CBVA) was carried out in the learning sites, to shed light on current and future adaptive capacity. CBVA approaches entailed field research such as semi-structured interviews with community members and other stakeholders, focus groups, and debriefing sessions. The aim was to map out potential intervention strategies and identify knowledge gaps for building local adaptive capacity.

Key lessons from the field research demonstrate that communities already utilise various soft and hard measures for shore protection and risk mitigation including sand bags, seawalls, and ecosystem-based approaches. Choosing an adaptation intervention that does not undermine current biophysical processes and human wellbeing is the most important decision criteria and lesson learned. Experience with hard engineering infrastructures that hinder other regulating and supporting ecosystem services have necessitated a move towards climate resilient development that looks at complementary benefits and synergies. In St. Lucia, for example, interdependence between agriculture and tourism sectors are potential entry points to address seasonal employment and to pursue niche markets for local produce. Beyond cross-sectoral linkages, integrated land-use and coastal zone policies were identified as necessary strategies towards jurisdictional and multi-level governance (see Brief 2).

3. UNDERSTANDING GOVERNANCE AS A DECISION-SUPPORT TOOL

Because climate change has cross-cutting impacts spanning economic sectors, ecosystems, and spatial scale of decision-making, governance mechanisms are crucial for community resilience and institutional partnerships. Governance best practices are about people and relationships, their associations, organizations, capacity to collaborate and adapt to change, and to build mutual links at multiple scales. Across SIDS, stakeholders have made significant progress towards adaptation planning at national and community levels. Governance for climate change considers institutions, policy processes, and actors in a broader adaptive framework. The challenge remains in coordinating adaptation interventions at both national and local levels with multiple partners and across jurisdictional scales.

The governance component addresses these disconnect between national adaptation planning processes and their implementation challenge at local levels.



Figure2: Governance workshop

The methodological approaches drew upon both theoretical foundations and empirical field research through interviews, focus groups, and participatory stakeholder workshops to identify barriers and enabling conditions for collective action (see chart). In Jamaica, for instance, there is evidence to demonstrate that community-based conservation and stewardship measures are embedded within multiple governance networks and partnerships that span jurisdictional scales. Often, these networks are community-based and include national and regional stakeholders in government and non-governmental organizations from one or several sectors including agriculture, fisheries and tourism. In St. Lucia, the Soufriere Marine Management Area Authority is an exemplar of community-based initiative that fosters social learning amongst government and non-governmental partners in conservation and development initiatives. The success of these governance arrangements has contributed to adaptation pathways, feasible solutions, and commitment towards consensus-based decision-making for climate hazards in the various learning sites (see Brief 6-9).

4. MANAGING FINANCIAL RISK THROUGH MICRO-INSURANCE

SIDS economies have historically been dependent on natural resources including agriculture, mining, and related industrial services. There has been an increasing focus on commercial investments in the blue economic sectors through the development of coastal and marine resources. Given this, and the frequent rate of natural disasters and human-induced coastal climatic hazards, financial risk management as an adaptation tool is necessary to sustain livelihoods and national economies especial in small coastal communities. Current funding streams and insurance programs are insufficient to address the myriad challenges resulting from adaptation planning, compensation, and disaster recovery.

There is a need for alternative schemes and disaster management programs for vulnerable low income households.

Within this context, micro-insurance has the potential to complement current loss and damage tools and risk transfer options to cope during and after shocks. Nonetheless, micro-insurance as an adaptation strategy has not been explored in detail, despite the proliferation of insurance schemes in SIDS in general. A well designed micro-insurance program could be part of a comprehensive approach that combines other lending programs, funding streams, endowments, and external development assistance. To shed light on how these possibilities can be initiated and implemented, the project team conducted demand surveys with vulnerable communities and relevant stakeholder groups in Seychelles, Mauritius, and across the Caribbean region. Enabling conditions include legal and regulatory policies, private-public partnerships, education and awareness, incentives to participate, and monitoring and evaluation programs. These policy lessons have implications for initiating best practices for local micro-insurance models in SIDS (see chart).

POLICY IMPLICATIONS AND FUTURE WORK

The GIVRAPD research design and integrated approach has proven insightful as a social learning platform and knowledge mobilization tool for researchers, practitioners, industry, and community leaders from local to regional scales. Shared lessons on climate change adaptation portfolios across the various learning sites provide an impetus for participatory decision-making that inculcates hard and soft measures, incentive-based compensation schemes, integrated knowledge systems, and various partnerships.

This mixed-method approach is appropriate in SIDS context where decision-making is often supported by scientific and quantitative data and where community interests are somehow marginalized. Lessons from the learning sites revealed the necessity to incorporate other missing components such as gender and youth as critical elements to climate change adaptation planning. As a result, the need for further insights into the skills and resources required for small communities to nurture local leadership and social capital is an area for applied policy research.

ABOUT THIS BRIEF

This policy brief is a product of research undertaken by the GIVRAPD project, a two year interdisciplinary research project funded by the Climate & Development Knowledge Network (CDKN) in collaboration with government agencies, community stakeholders and universities. The participating universities include University of Cape Town, University of Waterloo, University of Mauritius and University of Oxford.

The project was led by INTASAVE/CARIBSAVE in partnership with the African Climate and Development Initiative (ACDI), Global Climate Adaptation Partnerships, in addition to the Governments of Saint Lucia, Jamaica, Mauritius and Seychelles. The project seeks to understand the multi-scale socio-economic, governance and environmental conditions that shape vulnerability and capacity to adapt to climate change in four learning sites. Brief 1 focuses on the project design, components, and key lessons learned that are replicable in other SIDS.



FURTHER READING

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CDKN Disclaimer and other acknowledgements to be added