OACPS R&I | OACPS RESEARCH AND INNOVATION PROGRAMME

INNOVATION FUND

Integrating digital technologies and participatory tools to support coastal community resilience in Trinidad and Tobago (Tech4CoastalResilience)

Parent project: Harnessing Innovative Technologies to Support Resilient Settlements on the Coastal Zones of the Caribbean (HIT RESET Caribbean)

PROJECT COORDINATOR

Caribbean Natural Resources Institute (CANARI), Trinidad and Tobago

PARTNERS

Ministry of Agriculture, Land and Fisheries, Fisheries Division (MALF-FD)
Tobago House of Assembly, Department of Marine Resources and Fisheries (THA-DMRF)

LOCATION

Trinidad and Tobago

PERIOD

January 2023 - December 2024

EU FUNDING

EUR 392,559

SECTOR

Coastal, fisheries, tourism

KEYWORDS

Coastal resilience, local community, technology

CHALLENGE

Climate change impacts coastal communities' health and livelihoods and the natural environment across Trinidad and Tobago due to more extreme weather, coastal erosion and sea level rise. However, currently there is limited data and technical capacity to support robust vulnerability and impact assessments at the community level and inform the planning and implementation of relevant climate resilience actions and wider coastal management.

Additionally, there tends to be a top-down and technocratic approach to coastal planning and management, and weak integration of local and scientific knowledge to support more holistic and evidence-based decision-making.

Residents from Mayaro and civil society and government representatives mapping local climate impacts and vulnerabilities

PERSPECTIVES

Coastal zone management needs to take into account the vulnerability of settlements and their environment to the impacts of climate change and weather events, as well as the general and specific impact levels of these phenomena.

This information is needed to inform policies, stewardship, and local communities to take preventive and corrective measures, in other words to become climate resilient.

JUSTIFICATION

The project seeks to improve capture of local knowledge for a more in-depth understanding of local vulnerabilities and priorities for climate adaptation and building resilience using participatory and digital technologies and tools.

It will also help to resource and build the capacity of coastal management agencies for uptake of digital technologies and participatory tools and integration of the local knowledge generated from these into their work. This will enable resilience actions and coastal planning and management that is more inclusive and well informed by both scientific data and local knowledge and practices.

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METHOD

The approach is to build on existing use of information and communication technologies (ICTs) by identifying how these can be further enriched through digital technologies (e.g., drones) and participatory tools (e.g., participatory vulnerability assessments and scenario analysis) for local planning, action and monitoring for integration of local and scientific knowledge. This package of integrated technologies and tools will be developed with coastal management agencies, and then tested on the ground in coastal communities.

Together they will then evaluate and adapt the technologies/tools to ensure their relevance and applicability to the local context. This practical experience will be the foundation for agencies and community stakeholders to co-develop recommendations for adoption and scaling of the use of innovative digital technologies and participatory tools for coastal community resilience.

The coastal management agencies will consist of government entities working on climate change resilience, sustainable fisheries governance and management, local area planning and integrated coastal zone planning and management. At least 10 vulnerable coastal and fishing communities will include participants from resource user groups such as small-scale fisherfolk and eco-tourism enterprises, local disaster committees and village councils, and other community-based organisations.

INNOVATIVENESS

- Employing digital technologies (e.g., GIS and drones) using participatory approaches to improve capture of local knowledge for a more in-depth understanding of local vulnerabilities and priorities for climate change adaptation and coastal zone management with coastal communities.
- Resourcing and building the capacity of coastal management agencies for uptake of digital technologies and participatory tools and integration of the local knowledge generated from these.

Staff from coastal management agencies and community-based organisations presenting a participatory geographic information system P-GIS map of Waterloo Community

EXPECTED RESULTS

Impact

- Improved resilience of vulnerable coastal communities to climate change impacts in Trinidad and Tobago

Outcome

- Coastal communities and management agencies empowered to capture local knowledge and practices and guide decision-making for coastal resilience.
- Coastal management agencies have increased data access and capacity to support planning and execution of coastal resilience actions.

Outputs

- Coastal communities and management agencies informed on applicable digital and participatory technologies/tools to support prediction, planning and management.
- Coastal communities and management agencies have enhanced knowledge and skills to use digital and participatory technologies/tools for addressing coastal resilience.
- Coastal communities enabled to use digital and participatory technologies/tools to implement actions to adapt to and build coastal resilience.
- Coastal communities and management agencies have increased awareness of digital and participatory technologies/tools' applications and opportunities and barriers for scaling up.

HIT RESET is implemented by UWI in partnership with CDEMA and AdeKUS. HIT RESET provides support for projects that develop innovations to increase resilience in coastal communities of the Caribbean and strengthens institutions', national and local governments' ability to leverage information and knowledge for policy amendments.

HIT RESET supports 9 projects implemented in Barbados, Dominican Republic, Jamaica, Saint-Lucia, and Trinidad & Tobago that focus on:

- Digital and modelling technologies utilised by coastal development agencies and high-level decision makers in CARIFORUM countries to predict the impacts of climate change and natural disasters, and to plan and manage coastal communities.
- Government entities, coastal development agencies and coastal communities in CARIFORUM countries developing urban planning policies and/or plans that are conducive to the use of digital and modelling innovations for sustainable coastal development.

CANARI

MINISTRY OF AGRICULTURE, LAND AND FISHERIES

HIT RESET CARIBBEAN