

Exploration of Adaptation - Mitigation Synergies

The Caribbean Energy Sector – A New Narrative for Ambition

Key Points:

- Adaptation and mitigation action represent **two sides of the same coin** when climate action is aimed at resilience building.
- The **Paris Agreement's** capability to reflect and incentivise the exploration of synergies is limited.
- Innovative ideas, such as the SunSmart Emergency Shelter Programme, showcase the interdependence of adaptation and mitigation action, and that **effective and efficient** outcomes are reached only through **joint objectives or synergetic approaches**.

Background

This overview brief is based on findings developed by Factor for the Support Project for the Implementation of the Paris Agreement (SPA) in 2018. Central parts of this project entailed the conceptualization of a theoretical model that is able to explain mitigation and adaptation linkages. The energy sector of Caribbean Small Island Developing States (SIDS) was chosen as an example to study the practical applicability of the model's assumptions and predictions.

The Caribbean SIDS energy sector bears great potential for leveraging impactful change, as current energy supply remains to be mainly fossil-based and distributed via centralized grid-structures. Those systems tend to be highly vulnerable not only to the price volatility of fossil fuels but also to hurricanes and storms that frequently hit the Caribbean. Decentralized renewable energy solutions can allow consumers to regain access to electricity services in the aftermath of hurricanes more rapidly, thereby increasing the island's

and energy system's resilience to climate change.

Regional action, innovative ideas (e.g., storm resistant wind turbines such as developed by the Japanese start-up Challenergy, see Figure 1) and decentralized solutions are components of a new narrative, which calls for a rethinking of how climate action can be more holistic, effective, inclusive and more ambitious. It is the objective of this undertaking to project these ideas into the ecosystems of impactful sectors (energy, land use, etc.), and to engage local change agents in finding lasting solutions.

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Figure 1: Challenergy's innovative wind turbines (Credit: Challenergy Inc.)

Adaptation and Mitigation

Adaptation and mitigation measures comprise the two core pathways for climate action. This is recognized by the Paris Agreement (PA), which at least on the surface calls for balanced efforts on both fronts.

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The PA introduces the prominent co-benefits theme, which on paper is however only concerned with mitigation co-benefits of adaptation action and economic diversification (not vice versa). More broadly, the notion of side effects extends beyond the PA's declaration. That is, mitigation efforts are often found to have general and adaptation-related side effects (positive or negative); but while these are frequently observed, they are often unintended and as such are not internalized. Canonical examples can comprise mitigation co-benefits stemming from the use of mangroves for coastal defence, or alternatively adaptation co-benefits emerging from the promotion of modern forms of agriculture (i.e., projects aiming to reduce the carbon footprint of the agricultural sector are often found to also increase the adaptive capacity of the sector to environmental change or hazards, or shifts in climatic conditions).

The Resilience Gap Model

Adaptation and mitigation action are central development components. They are intrinsically linked through their impact on resilience to climate change. However, the link between adaptation and mitigation efforts often remains unnoticed – and as such untapped. This idea is captured by the Resilience Gap Model (Figure 2).

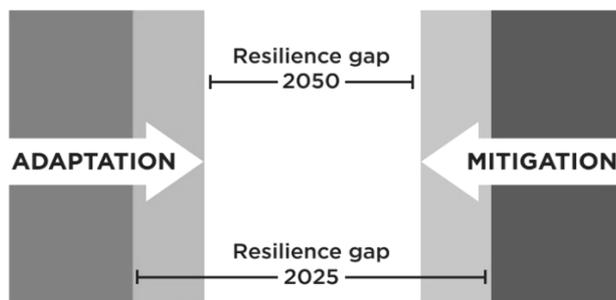


Figure 2: The Resilience Gap Model, based on UCS (2016)

The Resilience Gap describes the inability or the lack of preparedness to cope with the consequences of climate change. Conceptually, the Resilience Gap Model links mitigation and adaptation efforts by highlighting that more ambitious mitigation reduces the need for adaptation, and vice versa. The theory suggests overcoming the adaptation mitigation divide by redirecting focus to the resilience of people, communities and countries towards the impacts of climate change.

It is also through this shift of focus that adaptation and mitigation are integrated and mainstreamed into the overarching development agenda. Further, the model recognizes that resilience cannot be achieved through one-sided approaches. Any effort to fully close the resilience gap from either the adaptation or the mitigation side alone will not be successful. While this suggests that the resilience gap can only be closed where complementary, or ideally, synergistic approaches to climate change are pursued, it does also acknowledge the invariable need for high impact projects with one-sided focus only.

The resilience gap model features also practical advantages. By establishing a framework in which adaptation and mitigation are represented equally, the model can serve as a diplomatic tool to overcome negotiation hurdles. As such the resilience gap model can be helpful in mediating between countries or communities with different interests or priorities regarding the form of climate action and foster a common understanding of the interconnectedness of different approaches. By proposing that neither adaptation nor mitigation action will suffice in isolation, the model suggests that more holistic solutions are not only needed, but in fact more effective and efficient.

Practical Experiences

In practice, linkages between adaptation and mitigation can differ in their appearance but potentially can lead to the emergence of synergies. Reaching such high levels of alignment depends, however, on the purpose and the anticipation of the connection between adaptation and mitigation. Where objectives are jointly defined, resources can be used more efficiently, outcomes may be more effective, and synergies are possible.

Example: SunSmart's Emergency Shelter – Joint Objectives for Mitigation & Adaptation

Florida's SunSmart Emergency Shelter programme provides a compelling case for an example of joint objectives for renewable energy deployment and disaster risk management. It is an intervention, which takes a comprehensive approach to building resilience.



Figure 3: Solar Education (Credit: Florida Solar Energy Center)

The programme seeks to equip emergency shelters in about 100 schools in Florida with 10kW grid-tied Photo Voltaic (PV) systems coupled with battery storage. The ground-mounted PV system generates power during normal times, as well as during and after emergencies, when utility power is unavailable (Young, 2013).

The programme has built up resilience to climate change, by strengthening the adaptive capacity of communities and schools by equipping dedicated emergency shelters with renewable energy access. The role of renewable energy for this programme is significant. The solar PV systems allow affected community members to cope with power outages during and after storms. As such, the emergency shelter programme effectively represents a project fostering adaptation to climate change, while mitigation potentials of respective systems should not be neglected. SunSmart's Emergency Shelter programme features characteristics not found in projects following traditional co-benefit themes: The programme caters to the direct resilience needs of affected populations while simultaneously and deliberately featuring complementary activities that join adaptation and mitigation objectives into a holistic approach.

Due to its geographical proximity to the Caribbean SIDS and similar climatic characteristic, SunSmart's Emergency Shelter programme in Florida represents a best practice example that could be replicated by the SIDS's energy sectors. The high replicability and existing learnings from the Florida case allow for affected countries to engage in sustainable climate action through a proven concept.

Way Forward

Theoretical approaches such as the Resilience Gap Model expose pathways for taking advantage of neglected opportunities for climate action. It shows that where atomistic approaches to climate action are taken solely, the ability of a system to anticipate; absorb or recover from the effects of a hazardous event in a timely and efficient manner may be limited.

Synergies can be leveraged where both mitigation and adaptation strategies are considered. The primary focus lies on the resilience and the sustainable development of countries and communities. Mitigation and adaptation must be mainstreamed.

"Adaptation and mitigation action are intrinsically linked through their impact on resilience to climate change."

Focusing on the blend of adaptation and mitigation reframes climate action and demands a reconsideration of the functioning and operation of initiatives and processes. Communication, collaboration, alignment of existing policies, coordination of interventions and identification of shared opportunities are all significantly hampered where policy makers and international agreements fail to recognize the importance of joint efforts for designing mitigation and adaptation actions. The inability of existing instruments of governance to facilitate balanced approaches to climate change must be a call to policy makers and stakeholders to revisit prevailing approaches, and to consider pathways for greater integration.

Further readings

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