

From Atolls to Continents: Scaling Space Solutions for Coastal Resilience. Reality and Challenges: Seychelles Case

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Seychelles a SIDS contributing to safeguarding global marine ecosystem

- Seychelles is an Indian Ocean archipelago nation northeast of Madagascar, known for its 115 islands, rich biodiversity, and high-income economy driven by tourism and fisheries;
- With an EEZ that extends over 1 million sqm;
- A Population just over 100,000.00;
- Climate change poses a perpetual risk;
- A champion in environmental conservation supported by innovative funding mechanism;
- Illegible to ODA as a high-income country; and
- A SIDS that contributes to safeguarding the global marine ecosystems, Seychelles is faced with challenges that are common to all SIDS.

SIDS Atolls Contribution to Global Marine Ecosystems

1. Aggregate population approximately 65 million
2. Most under 1 million, with some less than 100 thousands
3. Slightly less than 1% of the world's population
4. Exclusive Economic Zone (EEZ), the ocean under their control on average, 28 times the country's land mass
5. Represents 16.1% of the world's total EEZs
6. Home of more than 20% of the world's biodiversity
7. 40% of the world's coral reefs
8. Making SIDS very important custodians of global ocean resources
9. Overall, SIDS play a marginal role in the global economy. In terms of the share in global GDP, which stands at 0.4%.

Seychelles Contribution to the global marine ecosystems

Seychelles as a SIDS contributes in safeguarding the global marine ecosystems through its Marine Spatial Plan.

- The Seychelles Marine Spatial Plan (SMSP) Initiative began in 2014. It is a process focused on planning for and management of the sustainable and long-term use and health of the Seychelles' ocean. Seychelles' marine waters encompasses 1,350,000 square kilometres and 115 islands in four archipelagos;
- The SMSP Initiative is an integrated, multi-sector approach to address climate change adaptation, marine biodiversity protection and support the Blue Economy and other national strategies considering of having:
 - 50% of all terrestrial areas and 30% of the Exclusive Economic Zone including 15% in 'fully protected' areas. At that time, more than 47% of the land was protected and only 0.04% of the ocean.
- It is funded by Seychelles Conservation and Climate Adaptation Trust (SeyCCAT); which was established with the Blue Bond, the first Environmental Trust;
- This the first world innovative funding mechanism, where national debt was swapped for marine space conservation.

Seychelles Marine Spatial Plan (SMSP); Reality, Prospects and Challenges

- The Seychelles' EEZ is among the top 25 largest in the world and Seychelles is a global biodiversity hotspot with two UNESCO World Heritage Sites;
- Seychelles MSP is guided by national laws, policies and priorities, as well as national commitments to international policies, conventions and treaties;
- The guiding principles of the Seychelles Sustainable Development Strategy (SSDS) provide an overall goal for the MSP Initiative: develop and implement an integrated marine plan to optimise the sustainable use and effective management of the Seychelles marine environment while ensuring and improving the social, cultural and economic wellbeing of its people; and
- It took 10 years for Seychelles to develop the MSP, which was launched this year.

Seychelles Marine Spatial Plan (SMSP); Challenges

As a SIDS, Seychelles lacks the capacity and capability to leverage digital technologies, including Geospatial Technologies to scaling Space Solutions for Coastal Resilience from Atolls to Continents:

Infrastructure and Connectivity are challenged by the following factors:

1. Broadband Access and high cost of data.
2. Costly infrastructure installation and maintenance.
3. Limited access to finance to invest in digital and sustainable development.
4. Costly digital transformation processes.
5. Digital skill gaps.
6. Narrow-base digital human capital due to demographic factors.
7. Brain drain.
8. Weak governance and coordination; institutional set ups, coordination and frameworks to manage digital transformation.
9. Data gaps; quality data and limited institutional capacity for data management and analysis.
10. Widening digital divide not within but between SIDS.

Seychelles Marine Spatial Plan (SMSP); Challenges (cont....)

1. Limited metadata availability for SIDS
2. Limited capacity to make use of the data
3. Limited high performance computing capacity for data processing and analysis.
4. Insufficient capacity for the application of AI
5. Mistrust in the use of AI
6. Mistrust in data security (issue of data sovereignty)
7. Disparity of digital capacity, resources and infrastructure amongst SIDS
8. Overall weakness of National Systems of Innovation (NSI).

Addressing Seychelles Challenges in harnessing Space and Satellite technologies

1. Proactive Investment in digital transformation, capacity building and local infrastructure development
2. Strategic Planning: Implementing comprehensive strategies that leverage human capital and innovative financing model
3. Capacity Building: Strengthening technological and institutional capacities and capabilities in data management and strategic foresight
4. Capacity and capability in processing big geospatial data
5. Regional and Global Collaboration: Leveraging, regional and global SIDS community collaboration in Space and Satellite technology
 - Dynamic framework for explore and innovate;
 - Utilising Space for peaceful purposes; and
 - Devising collective responsibilities.
6. Exploring SIDS geographical comparative advantage in the sphere of Space and Satellite technology
7. Promote Space entrepreneurship to be part of the global booming space sector as part of economic diversification

Seychelles as a SIDS Roles in Space Geopolitics

1. Advocacy in Multilateral Forums: Active participation in international discussions on space security and sustainability within their unique interests to influence outcomes.
2. Promotion of inclusive Space Governance: Advocacy for inclusive in climate and environmental aspects to support sustainability goals.
3. Urgency in regional or trans-SIDS capacity-building and investment indigenous space technologies to reduce dependency and enhance autonomy for sovereignty.

Final Thoughts

- Despite SIDS vulnerabilities, SIDS have a significant role to play in preserving our planet for:
- Representing 16.1% of the world's total EEZs;
- Being home of more than 20% of the world's biodiversity; and
- Occupying 40% of the world's coral reefs.
- However, SIDS voice should be heard and respected on the international arena, not as a vulnerable group but as partners to:
- Build economic resilience;
- Reduce impacts of climate change;
- Reduce reliance and dependence on spatial services
- Enhance space governance for all;
- Protect sovereignty; and
- Leverage geographical comparative advantage for global inclusivity and partnership.

Thank you