



Sustainable  
Energy  
Hub



UNITED NATIONS DEVELOPMENT PROGRAMME

# **ADVANCING A JUST ENERGY TRANSITION IN SIDS**

**POLICY PAPER**

DECEMBER 2024



UNDP's approach to development places at the center the priority of accelerating a global just energy transition and ensuring access to affordable, reliable, and sustainable energy. This vision intends to distribute the benefits of the transition equitably across people and society while minimizing potential negative impacts on the most vulnerable communities. The UNDP Sustainable Energy Hub (SEH) is a network of partners that work alongside countries to transform energy systems through an integrated agenda of policy, technology, and financial shifts that shape sustainable economic development.

In parallel with UNDP's Offer on sustainable energy is the UNDP SIDS Offer, *Rising Up for SIDS*, which articulates a clear strategy to support SIDS in addressing their most pressing needs and scaling innovative solutions to the complex and interconnected developmental challenges. The SIDS Offer acts as a vehicle for recovery to enhance support in climate action, blue economy, and digital transformation, with innovative development finance as an enabling cross-cutting area.

This policy paper, aligned with the Antigua and Barbuda Agenda for SIDS, intends to identify key actionable opportunities for sustainable energy within the next decade of development in SIDS as a key lever for providing equitable economic opportunities and resilience for integrated human development. This paper was developed in close cooperation with The Alliance of Small Island States (AOSIS) and was officially launched at COP29 in Baku in November 2024.

**United Nations  
Development Programme**

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## FOREWORDS

This policy paper outlines a vision for a just energy transition that drives sustainable development in Small Island Developing States (SIDS). It proposes an energy-for-development pathway tailored to SIDS as "large ocean states" and "digital islands." By aligning with the three pillars of UNDP's *Rising Up for SIDS Offer*—to enhance climate action, propel blue economies and catalyze digital transformation—and emphasizing sustainable finance as a key enabler, this paper reaffirms our commitment to addressing the diverse challenges facing SIDS communities.

Access to renewable energy in SIDS is about much more than just providing electricity. It signifies self-reliance, climate resilience, economic diversification, and enhanced quality of life. Despite notable progress, SIDS face persistent challenges in attaining affordable, reliable, and clean energy, particularly in rural areas. Geographic isolation, limited infrastructure, high dependency on imported fossil fuels, and financial barriers make it difficult to transition to sustainable energy systems. A just energy transition can be a transformative force for development, quickening progress in vital and interrelated sectors such as water, agriculture, health care, and education, and improving overall resilience and quality of life.

Achieving this vision requires coordinated action across multiple fronts to meet the Sustainable Development Goals. Engaging communities and empowering entrepreneurs, especially young people and women, is essential for developing robust energy solutions, strengthening policy frameworks, enhancing project viability, and building sectoral capacities to overcome financial constraints in access to capital.

Integrating digital technologies with energy and climate efforts can accelerate energy access, build climate resilience, and drive sustainable development. From co-creating solutions with youth in Timor-Leste to connecting small businesses to value chains in Barbados, digital innovation can play a pivotal role. Digital tools are invaluable for monitoring climate risks, enabling data-driven decisions, and supporting SIDS in their shift toward "digital islands."



By adopting an ecosystem approach that links renewable energy with ocean-based economies, SIDS can reduce fossil fuel dependence, strengthen green supply chains, and support economic diversification. SIDS' just energy transition offers transformative benefits to unlock new development sectors, foster local entrepreneurship, and support blue economy industries like urban agriculture, sustainable fisheries, and tourism to generate inclusive employment opportunities tailored to local contexts.

Sustainable energy—delivered through renewable, diversified, and decentralized systems—embodies a new future. This document is a call to action to forge robust partnerships across sectors and engage all stakeholders, defining development pathways and energy transitions that bring an era of hope, resilience, and self-reliance to SIDS.

**Marcos Athias Neto**  
Assistant Administrator and Director  
for Bureau for Policy and Programme Support

As SIDS, we are often characterized by shared vulnerability of remoteness, dependence on imported resources, and susceptibility to external economic shocks. But it is time to think of SIDS by the characteristics that really define us — cultural and societal resilience and innovation that ensure that no country, island, or community is left behind.

In the transformation from a narrative of shared vulnerabilities to one of shared opportunities, sustainable energy sits at the center, underlying our common aspiration to improve quality of life while conserving the natural and cultural heritage upon which our future depends. Sustainable energy systems offer an alternative path to the current reliance on imported fossil fuels which creates immediate and long-term energy security risks and severe trade imbalances.

We must therefore ask ourselves why renewable energy has not shifted the paradigm of energy in SIDS, especially with the clear and integrated benefits to building resilience and economic opportunity. High installation costs, lack of appropriate institutions and technical capacity, and limits in access to concessional development finance — all act as barriers to sustainable energy reaching scale. Although SIDS hold substantial potential to scale up renewable energy in wind, solar, ocean-based, and geothermal energy, the use of renewable energy remains low.

The pathway to address these challenges must be embedded directly in the next decade of development, codified through the Antigua and Barbuda Agenda for SIDS (ABAS) at the Fourth International SIDS Conference in May 2024.

First, we know that renewable energy will require strong political will and financial commitments, from both SIDS and the international community, to address the underlying barriers in accessing and mobilizing finance with a focus on deploying SIDS-specific technologies.

Second, we must advance policy and de-risking mechanisms and regulatory frameworks to support renewable energy investments that can advance institutional capacity and project implementation and unlock investments to create a pipeline of bankable renewable energy projects in SIDS.

Third, SIDS require technical capacity-building across the energy value chain, especially with a focus on the key role of women, to catalyze renewable energy solutions across the blue economy and implement resilient digital infrastructure. This support needs to be grounded in SIDS-SIDS partnerships for technology transfer and regional collaboration.

As this policy paper highlights, beyond economic diversification, sustainable energy empowers us to unlock the social and cultural capital of SIDS, fostering vibrant creative sectors and innovation hubs. I extend my sincere gratitude to the dedicated authors, researchers, and contributors who have carefully crafted this report to reflect the needs of SIDS. By embracing the transition to renewable energy, we can advance a future that is not only greener but inherently bluer, embodying the spirit of resilience and innovation that defines our identity.

**H.E. Fatumanava III Dr. Pa'olelei Luteru**  
Permanent Representative of Samoa to the United Nations  
and Chair of the Alliance of Small Island States





## EXECUTIVE SUMMARY

**For Small Island Developing States (SIDS), a just energy transition holds the potential to build resilience, shaping a transformative path toward self-reliance and a higher quality of life across SIDS. In alignment with the Antigua and Barbuda Agenda for SIDS (ABAS), the next generation of development must take sustainable energy as a key lever at the center of progress.** Strategic investments in clean energy can catalyze transformative changes, extending beyond energy access to impact agriculture, tourism, and fisheries, enabling inclusive and sustainable growth. For SIDS, renewable energy is a pathway to self-reliance, climate resilience, and economic diversification, providing a means to break free from fossil fuel dependence.

**By harnessing their abundant natural resources, SIDS have the potential to drive long-term growth and build resilience against climate-related shocks.** Currently, SIDS have an average electricity access rate of approximately 91%<sup>1</sup> and clean cooking access of around 58%<sup>2</sup> as of 2021, yet significant disparities exist within and among countries. With

high debt levels and vulnerability to climate change, SIDS require transformative approaches to energy access, transition, and finance to unlock sustainable development opportunities. However, lack of access to financing and investment from private and public funders remains a significant barrier. Fossil fuel reliance places a significant economic strain on SIDS, resulting in high and unpredictable energy costs and absorbing substantial public subsidies. Although the adoption of renewable energy remains low, averaging less than 20% of the energy mix, SIDS are uniquely positioned to lead the renewable energy revolution. Many SIDS have made a collective commitment to achieve 100% renewable energy in their power mix by 2030 and net zero emission targets by 2050.

**The just energy transition in SIDS presents opportunities to unlock new development sectors, stimulate local entrepreneurship, and strengthen the Blue Economy and industries such as urban agriculture, sustainable fisheries, electric mobility (or e-mobility), and tourism.** For instance, urban agriculture,

supported by renewable-powered irrigation, storage, and processing facilities, has the potential to enhance food security, reduce import dependence, and create local job opportunities. Similarly, e-mobility, particularly in tourism-driven SIDS, offers a sustainable transportation model, reducing emissions, improving air quality, and promoting green tourism. Together, these sectors can lead to more sustainable urban living environments, economic diversification, and a better quality of life for city dwellers.

Aligned with the ABAS Programme of Action adopted in May 2024, this policy paper aims to provide actionable steps within a roadmap for a just energy transition that supports sustainable development. By positioning renewable energy at the heart of development, SIDS can leverage their blue and green economies to build resilient societies that take full advantage of their natural and social capital. The key recommendations include:

**1. Enhance energy and climate resilience through decentralized renewable energy systems, local**

capacity building, and integrating renewable energy with water, agriculture, and other sectors.

**2. Leverage innovative financing and debt solutions,** including blended finance, thematic debt issuances, and debt restructuring/swaps, to attract private investment and ease debt burdens.

**3. Adopt an integrated 'whole island ecosystem' approach that combines renewable energy and blue economy** and supports community-led initiatives alongside gender-responsive policies.

**4. Embrace digital innovation, data, and AI to optimize the energy systems value chain,** improve energy planning and grid optimization, and create open data platforms for data-driven policymaking.

**5. Strengthen multi-stakeholder partnerships,** including intra-regional SIDS cooperation, to pool resources, share knowledge, and accelerate access to energy finance and technology.



CHAPTER 1

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# CONTEXT OF SUSTAINABLE ENERGY FOR DEVELOPMENT IN SIDS



# THREE DECADES OF PROGRESS THROUGH A UNIFIED SIDS AGENDA

In 1994, the Barbados Programme of Action (BPOA)<sup>3</sup> laid out the first framework for development priorities in Small Island Developing States (SIDS). This was followed by the Mauritius Strategy of Implementation (MSI) in 2005,<sup>4</sup> the SIDS Accelerated Modalities of Action (SAMOA) Pathway<sup>5</sup> in 2014, and more recently, the Antigua and Barbuda Agenda for SIDS (ABAS) in 2024. Through the different Programmes of Action, SIDS have achieved considerable development. Yet the COVID-19 crisis and economic turbulence resulting from global conflicts presented many economic challenges. Moreover, public debt has risen considerably. SIDS are on the frontline of global crises, from climate and ecological breakdown to health and economic challenges. Their acute structural challenges and multi-dimensional vulnerabilities are intensifying, with various risks interacting and compounding rapidly. This complex vulnerability is reflected in their high Multidimensional Vulnerability Index scores.<sup>6</sup>

The Antigua and Barbuda Agenda for SIDS (ABAS) adopted at the 4th SIDS Conference outlines a 10-year

plan to foster resilient prosperity.<sup>7</sup> It notes that even in the midst of intersecting crises, SIDS have become global leaders on issues such as climate change, financial system reform, ocean governance, and digital innovation. ABAS highlights the critical need for SIDS to access affordable, reliable, sustainable, and modern energy, particularly renewable energy.<sup>8</sup> It calls for urgent action to enhance support, investment, and partnerships that drive just, inclusive, equitable, and resilient energy transitions. This includes a focus on energy efficiency, clean and renewable energy infrastructure, advanced technology, and training, all aimed at helping SIDS achieve their ambitious renewable energy targets for the next decade.

To make the ambitions of ABAS a reality, sustainable energy offers multi-dimensional opportunities for SIDS to forge their development pathways towards economic and social well-being, energy security, and climate resilience. By identifying key leverage points, we can target opportunities that will drive transformative progress in SIDS' just energy transition.



## THE LAST MILE FOR UNIVERSAL ENERGY ACCESS IN SIDS



### **While there has been significant progress in electricity access across SIDS, ongoing disparities remain.**

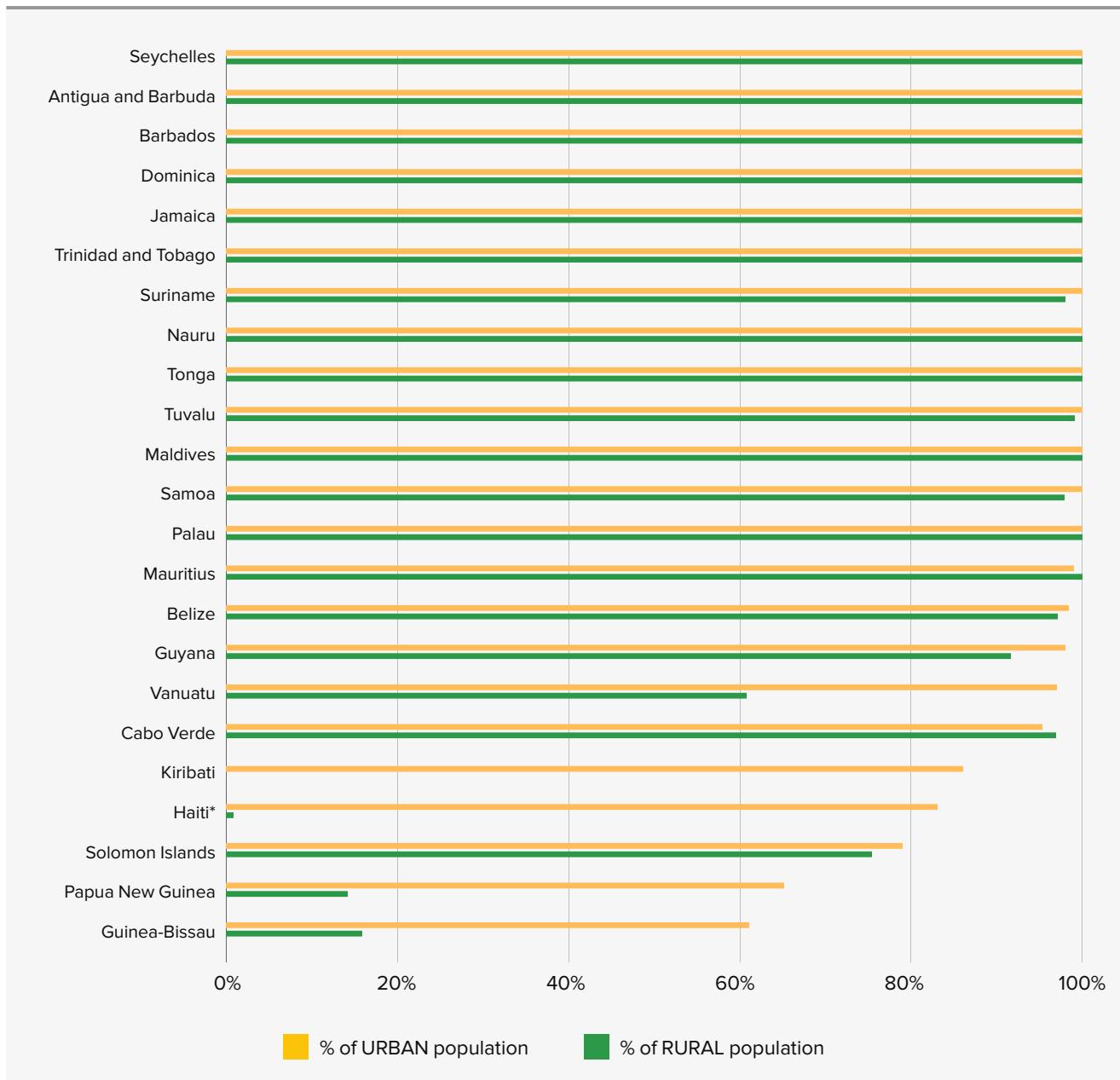
The overall electricity access across SIDS reached approximately 91%,<sup>9</sup> with substantial gains in the Pacific region, where access rose from 64.5% in 2009 to 85.06% in 2022.<sup>10</sup>

Despite these achievements, gaps remain (see Figure 1), particularly in countries like Papua New Guinea (19%),

Guinea Bissau (37.4%), and Vanuatu (70%) as of 2022.<sup>11</sup> Even in SIDS with higher overall rates, access disparities persist, especially in remote and sparsely populated areas. For instance, Haiti's electrification rates show significant differences, with only 1.2% access in rural regions compared to 79.9% in urban areas (as of 2019) and in Papua New Guinea, where 14.2% of rural residents have access versus 65.1% in urban areas.



**Figure 1. Electrification Rate in SIDS, 2022<sup>12</sup>**



\* Note : Haiti's rural access data is based on 2019 figures

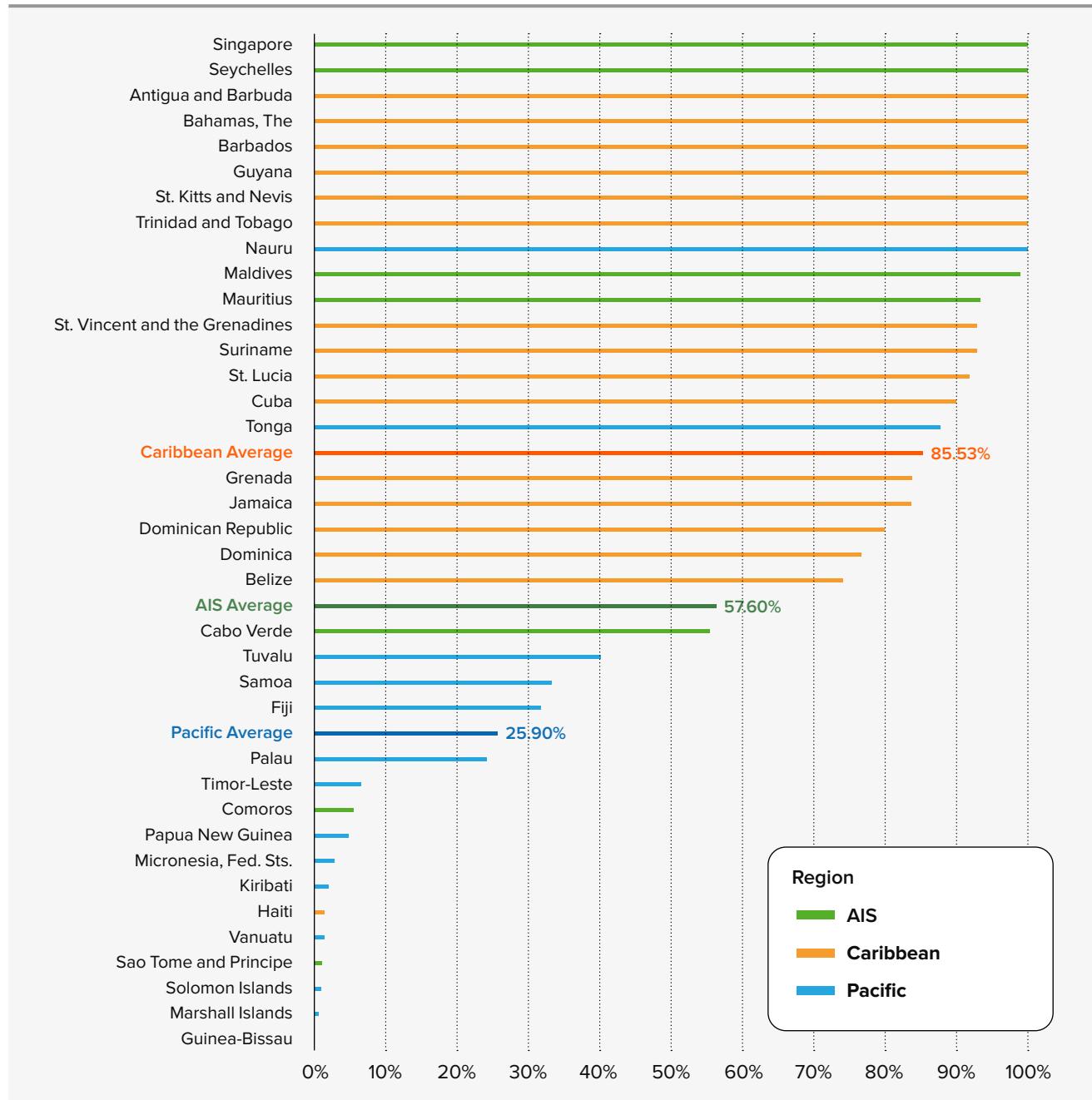
**Similarly, urban-rural disparities in clean cooking access compound the energy gap.** As of 2021, only 58% of people in SIDS had access to clean cooking solutions, compared to a global average of 74%.<sup>13</sup> Clean cooking access varies widely across SIDS, with near-universal access in Caribbean countries and the Maldives, while others lag behind significantly—some as low as 1% in

rural regions (Figure 2).<sup>14</sup> Specific examples depict this divide: in Guinea Bissau, rural access to clean cooking is virtually nonexistent at 0% (compared to 2% in urban areas); Kiribati stands at 2% rural versus 20% urban, and in Vanuatu, rural access is only 2% compared to 19% in urban areas.<sup>15</sup>

**Addressing these disparities is critical to building resilience and sustainable development.** Altogether, these gaps highlight the pressing need for equitable distribution of electricity and clean cooking solutions, as many regions face overlapping challenges such as poverty, food insecurity, limited healthcare, volatile

agriculture, deforestation, and climate risks. Tackling these challenges with clean energy is essential to advancing the ABAS objectives of building resilient economies and securing a sustainable future over the next decade.

**Figure 2. Access to Clean Fuels and Technologies for Cooking, Percentage of Rural Population, 2022**



# TOWARD A JUST ENERGY TRANSITION IN SIDS



## **SIDS' heavy reliance on fossil fuels constrains economic growth and threatens energy security.**

Currently, fossil fuels constitute around three-quarters of SIDS' electricity mix.<sup>16</sup> About 60% of SIDS currently import over 90% of their fossil fuel supply for electricity generation.<sup>17</sup> This invariably increases challenges to human development and livelihoods. Additionally, fossil fuel dependence has widespread implications for sectors like transport, especially as regions like the Pacific SIDS channel about 75% of imported oil toward the transport sector.<sup>18</sup> Moreover, high exposure to natural hazards compounded by climate change

exacerbates vulnerabilities from depending on fossil fuels for electricity access.<sup>19</sup> Such heavy reliance exposes SIDS to high and volatile energy costs - up to four times higher than in continental regions, frequent supply disruptions, and delivery inefficiencies. Public finances also bear a considerable burden, as seen in Suriname, with fossil fuel subsidies peaking at 8% of GDP (Table 1). These subsidies drain resources that could be redirected toward cleaner, more resilient energy systems, underlining the urgency of a sustainable transition.



**Table 1. Explicit Fossil Fuel Subsidies in SIDS, 2020**

| Country                          | Millions of dollars | Percentage of total government expenditure | Percentage of GDP |
|----------------------------------|---------------------|--|-------------------|
| Papua New Guinea                 | 343.9               | 6.3  | 1.4               |
| Trinidad and Tobago              | 279.7               | 3.7  | 1.3               |
| Suriname                         | 196.6               | 26.2                                       | 8.0               |
| The Bahamas                      | 63.2                | 2.1  | 0.6               |
| Timor-Leste                      | 58.9                | 5.3  | 3.7               |
| Maldives                         | 55.4                | 2.9  | 1.4               |
| Mauritius                        | 45.9                | 1.2  | 0.4               |
| Haiti                            | 31.3                | 2.2  | 0.2               |
| Antigua and Barbuda              | 12.1                | 3.2  | 0.9               |
| Saint Vincent and the Grenadines | 3.9                 | 1.4  | 0.5               |

Source: IMF (2021),<sup>20</sup> OECD and IISD (2023),<sup>21</sup> UNDP estimates.

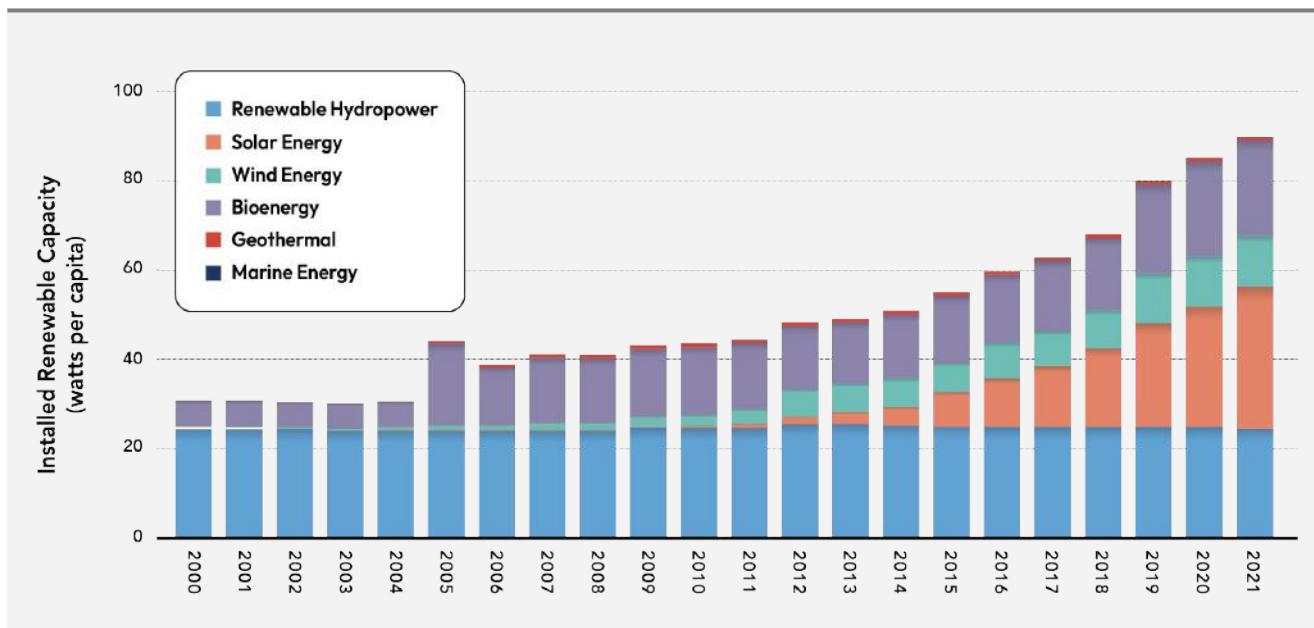
**Renewable energy uptake in SIDS remains low, but there is steady growth in the installation of renewable capacity.** Although renewable energy usage averages less than 20 % across SIDS,<sup>22</sup> this share drops to 8% when traditional biomass is excluded.<sup>23</sup> Some outliers persist, with countries with low energy access rates, such as Guinea Bissau, Haiti, Papua New Guinea, Solomon Islands and Fiji, generating significant energy from renewable sources, primarily hydro, although at levels insufficient to meet demand. Nonetheless, SIDS are expanding capacity with a compounded annual growth rate of 8.5% in installed renewable electricity generating capacity from 2016 to 2021. The total installed renewable

energy capacity in SIDS has increased from 3.5 GW in 2014 to nearly 6 GW in 2020, mostly from more solar use (Figure 3).<sup>24</sup>

Specific countries, including Antigua and Barbuda, Barbados, Maldives, Nauru, and Seychelles, have shown rapid renewables growth in recent years. Long-standing leaders in renewable generation, such as Belize, the Dominican Republic, Fiji, Mauritius, and Samoa, continue to push the sector forward.<sup>25</sup> Yet, despite these advances, the high upfront costs of renewable infrastructure present significant challenges.



**Figure 3. Renewable Installed Generating Capacity in SIDS, 2000 to 2021**



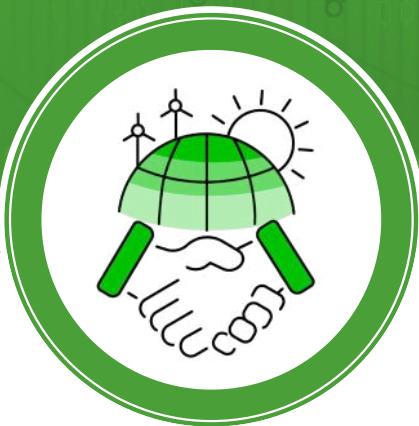
Source: IRENA, 2023.<sup>26</sup>

**SIDS are leading global calls for a just and equitable energy transition, turning climate vulnerabilities into opportunities for advocacy and action.** Recognizing the need for both energy access and energy justice, many SIDS, including but not limited to Fiji, Niue, Marshall

Islands,<sup>27</sup> Samoa,<sup>28</sup> Solomon Islands,<sup>29</sup> Tonga, Tuvalu and Vanuatu, have taken an active role in multilateral environmental negotiations, advocating for a fossil fuel phase-out and highlighting opportunities for SIDS in the energy transition.



# THE STATE OF ENERGY FINANCE IN SIDS



**SIDS face significant climate finance gaps despite global commitments.** Global climate finance reached a record US\$1.3 trillion in 2022, yet this number shows a stark disparity for specific regions, including SIDS.<sup>30</sup> Regional reports on climate finance,<sup>31</sup> including in the Pacific and the Caribbean,<sup>32</sup> and for the Indian Ocean<sup>33</sup> and African SIDS, show that, with the exception of the Pacific, there has been no dramatic increase in financing flows from developed countries to SIDS. In 2019, SIDS accessed just US\$1.5 billion of the US\$100 billion climate finance pledged to developing countries, highlighting the deep financial shortfall for these vulnerable nations.<sup>34</sup> Moreover, between 2002 and 2016, SIDS received around US\$4.13 billion in energy aid, mainly focused on the Caribbean,<sup>35</sup> with some islands facing energy access gaps that remain inadequately funded.

In addition, many SIDS continue to rely on Official Development Assistance (ODA). However, ODA to SIDS remains comparatively low, standing at under US\$3 billion in 2020 for all SIDS. Approximately, two-thirds of ODA-eligible SIDS are currently classified as lower-middle or upper-middle-income economies and are at risk of becoming ineligible for concessional financing. This mismatch reflects the inefficiencies in the current international aid and climate finance architecture.

**SIDS face overwhelming debt burdens that hinder energy and climate resilience investments (see Table 2).** Over 40% of SIDS are grappling with, or are on the edge of, unsustainable levels of debt, severely constraining their ability to invest in resilience, climate action, and sustainable development.<sup>36</sup>



**Table 2. Fuel Imports and Government Debt in SIDS**

| Country               | Fuel Imports as % of GDP | Current Account Balance (- is deficit) as % of GDP | Government Debt as % of GDP |
|-----------------------|--------------------------|--|-----------------------------|
| Seychelles            | 17.6                     | -13.7  | 84.8                        |
| Palau                 | 16.5                     | -41.7  | NA                          |
| Jamaica               | 12.1                     | -0.4   | 108.1                       |
| Fiji                  | 12.1                     | -12.7  | 63.1                        |
| Guyana                | 11.8                     | -16.4  | 51.1                        |
| Maldives              | 10.1                     | -35.5  | 154.4                       |
| Samoa                 | 8.1                      | 0.2  | 43.2                        |
| Samoa                 | 8.1                      | 0.2  | 43.2                        |
| Sao Tome and Principe | 8.0                      | -11.0  | 81.4                        |
| Solomon Islands       | 7.6                      | -1.6   | 13.7                        |
| Mauritius             | 7.5                      | -9.2   | 99.2                        |

Source: IMF; WDI data. \*Development Indicators data.

SIDS' external indebtedness is considerably higher than that of other developing countries. Between 2000 and 2019, the external debt of SIDS rose by 24 percentage points (of GDP), while in developing countries, debt fell by 6.2 points on aggregate. By 2019, external debt accounted for 62% of GDP on average in SIDS,<sup>37</sup> compared with 29% for all developing countries and economies in transition, and at least six countries have a debt-to-GDP ratio exceeding 100% — Dominica, Cabo Verde, Barbados, Suriname, Maldives, and Antigua and Barbuda.<sup>38</sup> The total public debt for SIDS now stands at approximately US\$82 billion.<sup>39</sup> This is while around half of the climate finance provided to SIDS in 2017–2018 was in the form of loans, which added more debt. Furthermore, all SIDS received a combined US\$1.5 billion in climate finance between 2016 and 2020.<sup>40</sup> But in the same period, 22 SIDS paid more than US\$26.6

billion to their external creditors — almost 18 times as much as they received in loans.<sup>41</sup> In addition, high fuel imports, significant current account deficits, and substantial government debt levels exacerbate SIDS' vulnerability, making them highly susceptible to debt distress caused by shifts in exchange rates or interest rates in international markets.

The challenges of delivering energy finance to SIDS are exacerbated by high transaction costs, geographical remoteness of SIDS, and structural inefficiencies. Studies also highlight that small public sectors in SIDS often lack the capacity to handle large-scale climate funding,<sup>42</sup> and reaching marginalized groups remains a key challenge. This emphasizes the need for direct access to funds and support for strengthening domestic institutions to manage disbursements more efficiently.

CHAPTER 2

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## **SUSTAINABLE ENERGY IN SIDS' NEXT DECADE OF ACTION**



# SUSTAINABLE ENERGY AS A KEY ENABLER FOR DEVELOPMENT

**Access to renewable energy in SIDS offers more than just energy; it represents a path to self-dependence, climate resilience, food security, economic diversification, sustainable development, and improved quality of life.** Placing sustainable energy at the heart of development can unlock the vast potential of the energy transition to empower women, youth, and communities; provide access to affordable, reliable, and clean energy; help unlock the full potential of blue economies and full valuing of SIDS' unique natural and social capital.

**Understanding among SIDS that renewable energy is a key lever of development has resulted in some of the most ambitious energy transition targets in the world.** As of October 2022, 40 SIDS that ratified the Paris Agreement on climate change had submitted nationally determined contributions (NDCs), and 29 of them have since updated their plans. If these targets are achieved by 2030, renewable power capacity in SIDS will more than double, reaching 13 GW, with many countries aiming for 100% electricity generation from renewables.<sup>43</sup>

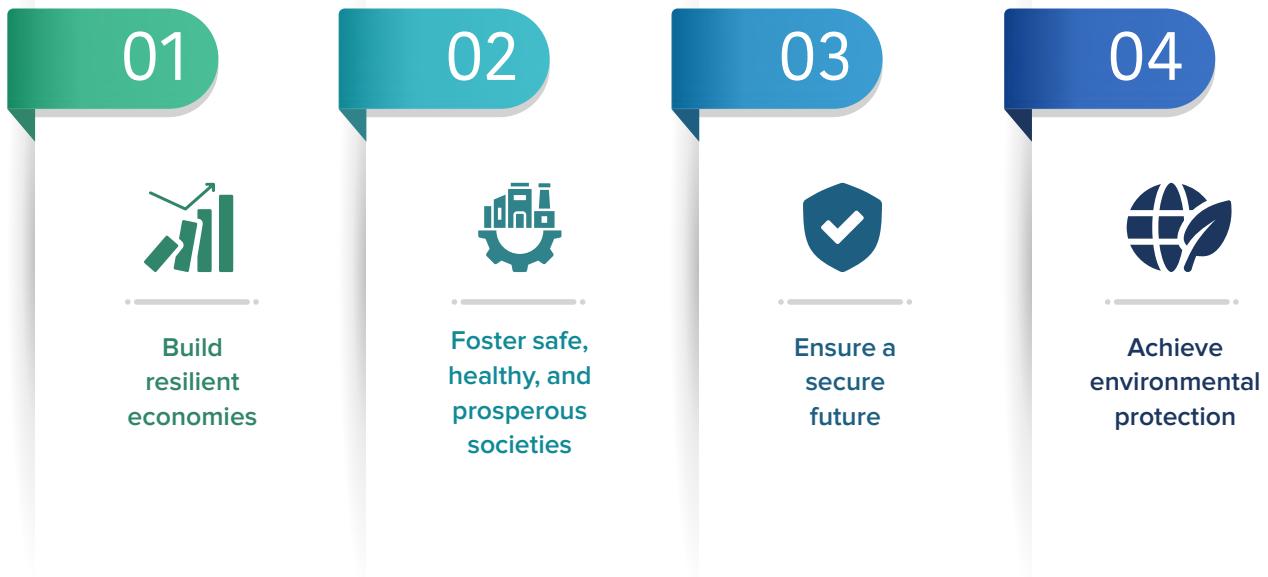
Leveraging these ambitious goals, along with the new ABAS pathway, the priority now is to implement a transition that not only achieves these targets but also

ensures equitable access to the benefits of renewable energy for all communities. **ABAS outlines SIDS' priorities and ambitions, including to:**

- **Build resilient economies** by, *inter alia*, developing and expanding SIDS' productive capacity, increasing trade and investment, promoting resilient and sustainable tourism, and promoting sustainable ocean-based economies;
- **Foster safe, healthy, and prosperous societies** by, among other actions, strengthening health systems, building strong institutions, achieving gender equality, empowering youth, and leaving no one behind;
- **Ensure a secure future** by, among others, fostering sustainable energy transitions, developing integrated water resources management, enhancing food security, building resilient infrastructure, and enhancing transportation and connectivity; and
- **Achieve environmental protection** and planetary sustainability, with international support, by urgently taking action on climate change; conserving and sustainably using the ocean and its resources; conserving, restoring, and sustainably using biodiversity; and mainstreaming disaster risk reduction (DRR).<sup>44</sup>



**Figure 4. SIDS' Priorities and Ambitions Outlined by ABAS**



**A just energy transition can enhance economic resilience and position SIDS as ‘large ocean States’ and ‘digital islands.’** Reducing fossil fuel subsidies in SIDS offers a strategic opportunity to redirect public resources toward essential development goals, including infrastructure, digitalization, modernization, and education. Reallocating these funds could significantly enhance energy security, promote sustainable growth, and reduce fiscal pressure. By investing in renewable energy, modern infrastructure, and education, SIDS could promote economic diversification, prepare a skilled workforce for the future, and advance toward a just energy transition, ultimately building resilience and independence for future generations. To state, the renewable energy sector offers higher median wages and better job stability compared to many traditional industries, which can significantly enhance economic resilience in SIDS. Innovative technologies such as smart meters and grid optimization further enhance the efficiency and reliability of energy systems, making them more resilient in the face of climate challenges.

Renewable energy employment in SIDS, though a small part of the global total of 13.7 million,<sup>45</sup> has strong growth potential, especially as these nations advance their Nationally Determined Contributions (NDCs). Employment in solar PV and wind could expand from just over 6,000 jobs in 2022 to more than 16,000 by 2030, with solar PV growing faster due to high sector targets. The Caribbean is projected to lead in total renewable energy jobs, with significant growth also expected in the AIS and Pacific regions. By 2030, Mauritius, the Dominican Republic, and Papua New Guinea are poised to become regional employment leaders, with job counts estimated at 2,600, 5,500, and 2,550 respectively.<sup>46</sup>

While large-scale manufacturing of renewable components is unlikely, local assembly and maintenance offer job creation opportunities. Training and re-skilling local labor are essential for supporting SIDS' shift to renewables, particularly as sectors like transport and fisheries adopt electrification. The transferable skills in renewable energy also enable broader sustainable

development, creating skilled positions in areas like urban planning, agriculture, and fisheries, with special opportunities for youth and women.

**An integrated approach to the energy transition can help unlock possibilities across key sectors.** This shift can stimulate industries such as sustainable agriculture, eco-tourism, and green technology, offering direct benefits to communities. For example, by transforming ports into "clean energy hubs," renewable energy like solar and wind can power fishing vessels and harbor operations, reducing costs, emissions, and dependence on foreign energy while enhancing climate resilience. In fisheries, renewable-powered ports can cut costs, reduce emissions, and increase climate resilience. The tourism sector, a major economic driver, can be improved through e-mobility, where electric vehicles and renewable-powered transportation systems offer greener, more efficient travel options, reducing environmental impact and boosting local economies. With 56.1% of SIDS' populations living in urban areas (as of 2023),<sup>47</sup> a clean energy shift also unlocks new

possibilities for urban agriculture, potentially enabling food security and sustainability in cities. By integrating renewable energy with agriculture, water management, and poverty alleviation efforts, SIDS can accelerate progress toward the SDGs.

**Tailored energy transitions can unlock unique opportunities for SIDS by tapping into regional strengths and addressing local needs.** While SIDS face common challenges like climate vulnerability and fossil fuel dependence, each region's distinctive geography, economy, and resources create diverse pathways for transformation. Caribbean SIDS can boost resilience and tourism by integrating renewable energy into their infrastructure. Pacific SIDS, with vast marine resources, have great potential in microgrids and ocean-based energy to overcome isolation and reduce costs. Meanwhile, SIDS in the Atlantic, Indian Ocean, and South China Sea, often agriculture-focused, can drive growth by applying solar and wind energy to rural farming. By embracing these regional strengths, SIDS can achieve impactful, locally relevant energy transitions.<sup>48</sup>



## UNDP's Offer for a Sustainable Energy Revolution in SIDS

UNDP has a long-standing presence in SIDS, supported by a network of 6 Multi-Country Offices and 15 Country Offices that reaches 50 SIDS. The UNDP SIDS Offer “*Rising Up for SIDS*” is an integrated approach tailored to address the unique challenges of these countries.

**Figure 5. UNDP SIDS Offer, *Rising Up for SIDS***



**Climate Action:** UNDP strengthens climate resilience in SIDS by promoting decentralized renewable energy, reducing reliance on imported fuels, and stabilizing energy supplies. These efforts support SIDS in meeting NDCs while enhancing climate adaptation and creating resilient green economic opportunities.

**Blue Economy:** Integrating renewable energy into initiatives like solar desalination, electrified maritime transport, and low-carbon fisheries, UNDP helps diversify economies, enhance livelihoods, and protect marine ecosystems for long-term prosperity within a Blue and Green Islands integrated approach.

**Digital Transformation:** UNDP supports SIDS in becoming “digital islands” by deploying renewable energy-powered digital infrastructure, enhancing connectivity, e-governance, and smart energy management, while optimizing resources through AI and IoT solutions for data-driven projects and programming.

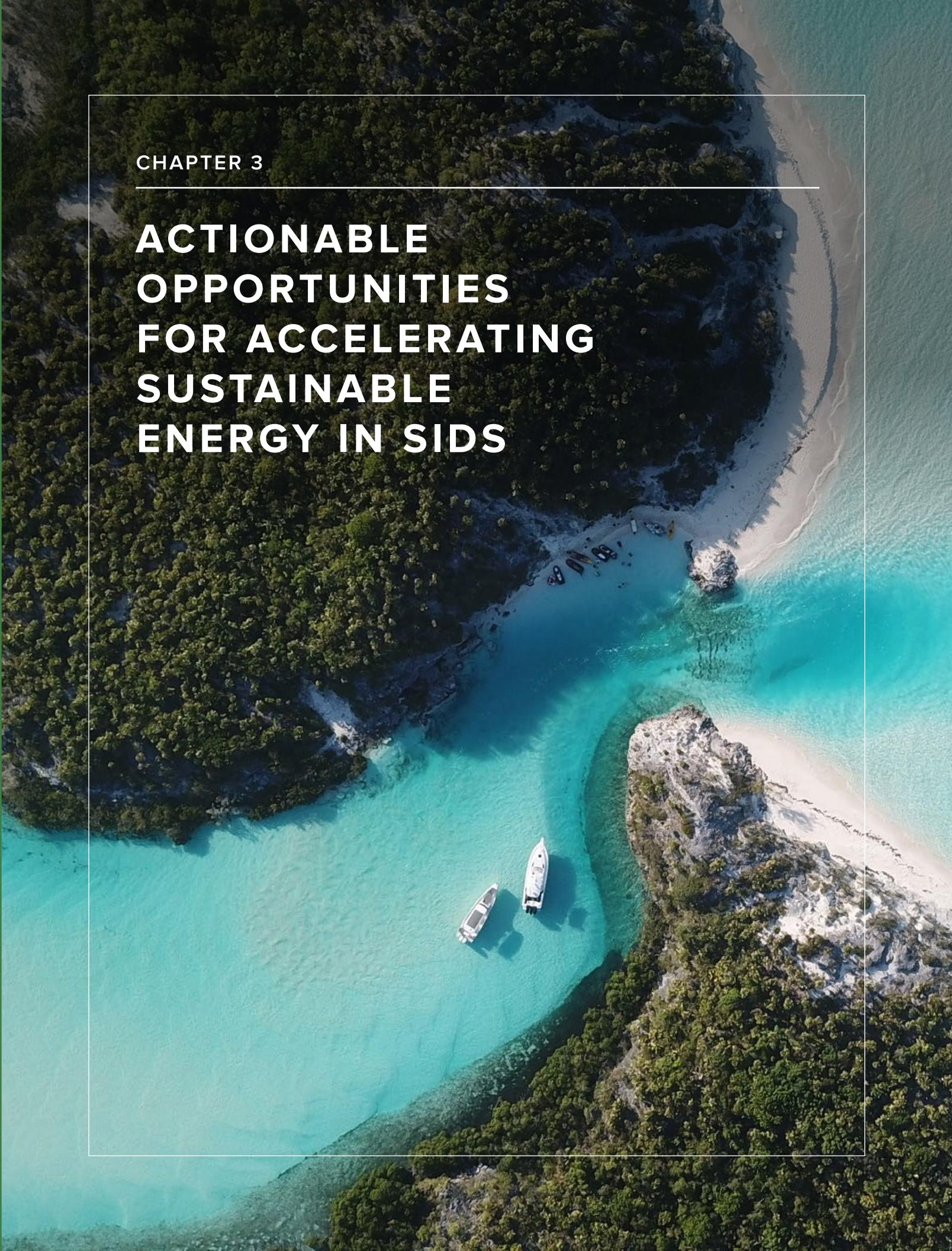
**Finance:** Sustainable and innovative finance is essential for accelerating SIDS’ energy transition and resilience efforts. UNDP advances innovative finance mechanisms while providing support for capacity-building and policy reform.

Looking ahead, UNDP remains committed to SIDS in their resilience-building efforts aligned with the ABAS programme of action, driving sustainable energy solutions that empower these nations in their collective journey toward sustainable development. Through its Sustainable Energy Hub, UNDP partners globally to help SIDS transform energy systems with integrated solutions in policy, technology, and finance, tailored to the specific needs and opportunities of island communities.

CHAPTER 3

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# ACTIONABLE OPPORTUNITIES FOR ACCELERATING SUSTAINABLE ENERGY IN SIDS

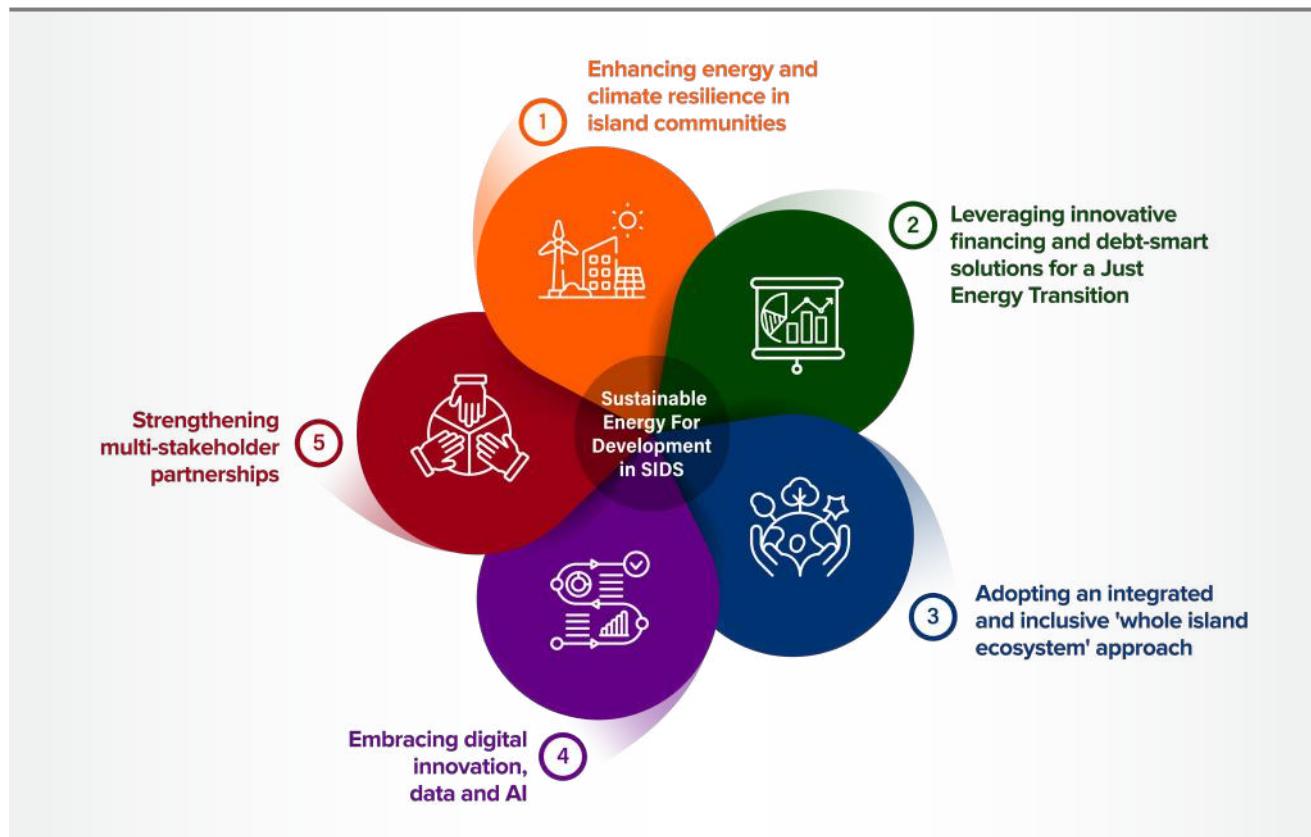


# RECOMMENDATIONS TO ADVANCE SIDS' SUSTAINABLE ENERGY FOR DEVELOPMENT PATHWAY

An integrated approach combining policy, finance, and technology is essential to drive a just energy transition in SIDS, supported by strategic international assistance to overcome scale barriers. Innovation across digital technology, blue economies, and climate action can

further accelerate this shift, laying the foundation for resilient, sustainable growth. The following recommendations outline a targeted path for SIDS to achieve an equitable energy transition in line with the ABAS agenda.

**Figure 6. Five Steps within SIDS' Sustainable Energy for Development Pathway**





No. 1

## Enhancing energy and climate resilience in island communities

**Prioritizing decentralized renewable energy (DRE) systems, including off-grid solar, wind, and mini-grids, offers a strategic pathway to deliver reliable and localized power sources in SIDS.** These systems can operate independently from the main grid and provide electricity to isolated communities. These are also less vulnerable to natural disasters and economic shocks (especially oil supply shocks) that often disrupt

centralized infrastructure. By focusing on locally available renewable resources, SIDS can reduce dependence on imported fossil fuels, lowering costs, ensuring universal electricity access, and improving energy security. To implement this, SIDS should assess high-risk, off-grid areas, identify local renewable resources, and invest in the required infrastructure for these decentralized solutions.



### **Box 1. Decentralized Energy Solutions in Vanuatu**

Vanuatu, with its 300,000 residents spread over 83 islands, faces significant energy access challenges, as approximately 39% of its rural population lacks electricity. DRE solutions are particularly effective here. For instance, a new hybrid solar and hydropower mini-grid in Loltong village on Pentecost Island now powers 100 households, two schools, a clinic, retail shops, and community buildings.<sup>49</sup> Improved energy access also supports local economies, like the Marae fishing community on Emae Island, where solar power enables refrigeration and powers entire fish markets.

With a goal of 100% rural electrification and complete renewable transition by 2030,<sup>50</sup> Vanuatu is expanding DRE systems, supported by the Barrier Removal for Achieving the National Energy Road Map Targets of Vanuatu (BRANTV) project. Funded by the Global Environment Facility and implemented by UNDP and Vanuatu's Department of Energy, BRANTV is bringing renewable energy to 37 communities, improving life for over 50,000 people.

**Investing in local capacity building is essential for the sustainability of decentralized renewable energy systems, enabling communities in SIDS to effectively manage, operate, and maintain these systems.** Solar, wind, and biomass projects can generate local employment opportunities in installation, maintenance, and management.<sup>51</sup> For a US\$1 million investment in decentralized renewable energy technologies over 10 years, wind energy generates 5.7 person-years of employment, solar PV generates 5.7 person-years, and the coal industry only generates 4 person-years.<sup>52</sup> To

maximize the potential of DRE, SIDS should focus on workforce development by training local populations in renewable energy technologies. This creates a sustainable, skilled labor force and builds local capacity, ensuring long-term benefits from renewable energy investments.

**Advancing energy storage solutions, such as batteries and pumped hydro storage, enhances resilience by ensuring a steady power supply during periods of low renewable generation or high demand in SIDS.**



Integrating decentralized energy systems with existing grids can provide greater flexibility and stability, reducing vulnerability to climate-related disruptions. To improve resilience, SIDS should modernize infrastructure to support multiple energy sources and invest in energy storage to ensure reliable, uninterrupted power supply.

**Integrating renewable energy solutions into the water, fisheries, and agriculture sectors enhances climate resilience in SIDS.** SIDS face heightened climate change impacts on agriculture and fisheries, with increased vulnerability to droughts, floods, and dependency on food imports. In fact, 71% of SIDS face a risk of water shortage, and this figure rises to 91% for those at the lowest altitudes.<sup>53</sup> Renewable energy technologies, like solar-powered irrigation systems, offer adaptation solutions by improving agricultural yields and reducing costs for small farmers. For example, solar irrigation has been successfully applied in Cabo Verde and Guinea-Bissau, enhancing crop production and lowering electricity bills. In Cabo Verde, which faces reduced agricultural production due to drought and water scarcity, an initiative supported a vertical agriculture solution<sup>54</sup>

that saves water, expands the use of renewable energy, and increases agricultural productivity.

In fisheries, solar PV systems can support cooling and storage. In the Maldives and Cabo Verde,<sup>55</sup> solar-powered ice-making facilities have reduced fuel use, lowered costs, and minimized waste, benefiting both local fishers and consumers. These systems also present additional revenue opportunities; in Dhiffushi, Maldives, local residents sold ice to neighboring islands, generating income for the island community.<sup>56</sup>

Such renewable solutions also empower women, who represent 52% of SIDS' agricultural workforce.<sup>57</sup> In Guinea-Bissau, solar-powered irrigation systems in rice cultivation have freed women's time for education, while in the Solomon Islands, women's associations have used solar-powered freezers to support local fish storage and micro businesses.<sup>58</sup> Further, projects like the Maldives' POISED initiative, supported by the Asian Development Bank, demonstrate that solar energy investments can lower fuel costs, reduce pollution, and drive local economic growth in SIDS.





No. 2

## Leveraging innovative financing and debt-smart solutions for a Just Energy Transition

**To close financing gaps, SIDS can focus on leveraging domestic resources, including optimizing government expenditures and enhancing public financial management.** Public financing remains essential to bridge affordability gaps, especially in last-mile and low-income contexts within SIDS. Optimizing expenditures in SIDS for the energy transition, particularly through fossil fuel subsidy reforms, can provide substantial resources.

Further, aligning fiscal policies with climate goals through green public financial management (PFM) will ensure that investments contribute to long-term sustainability. This involves incorporating climate risk assessments into budgeting and planning processes. Additionally, governments can implement 'above the line' financing measures to boost revenues, such as revising tax policies and optimizing expenditures.

### Box 2. Barbados' Path to Economic Resilience

Barbados offers one of the best examples of a SIDS undertaking fiscal and macroeconomic consolidation to build greater self-reliance. Following a series of natural disasters and the effects of the global financial crisis in 2008, Barbados entered a prolonged recession and defaulted on its debt, leading to a loss of market access. An ambitious fiscal and macroeconomic consolidation effort began. It included a debt restructuring program and considerable pruning of energy subsidies in 2018-2019 which transformed the economy and supported Barbados with greater resilience to economic shocks and restored its access to international capital markets.

**Private sector investment is crucial for achieving the energy transition in SIDS. To attract private capital, blended finance mechanisms should be employed to mitigate risks associated with high investment challenges.** Blended finance involves the strategic use of concessional funding, typically sourced from public or philanthropic entities, to encourage private sector participation. It relies on key elements that make private-sector investment more viable in high-risk contexts like SIDS. Risk mitigation tools, such as guarantee schemes and insurance, reduce financial risks for investors, making projects more appealing. Concessional capital from development finance institutions provides loans at below-market rates, lowering capital costs and enabling otherwise unviable projects. In addition, technical

assistance through grants and capacity-building strengthens local actors, improving project bankability and attracting private investment.

Developed in collaboration with international partners, blended finance facilities can stimulate private investment via national development banks and local financial institutions, which can support projects in renewable energy, energy resilience, sustainable transport, and digital solutions for decarbonization and development. The Caribbean Catastrophe Risk Insurance Facility is an example of a blended finance tool used for disaster risk reduction, which could be adapted for energy infrastructure recovery.<sup>59</sup>

### **Box 3. UNDP's De-risking Renewable Energy Investment (DREI) framework<sup>60</sup>**

UNDP's DREI framework systematically identifies the barriers and associated risks that can hold back private sector investment in renewable energy. It then assists policymakers to put in place packages of targeted public interventions to address these risks. Each public intervention acts in one of three ways: either reducing, transferring or compensating for risk. The overall aim is to cost-effectively achieve a risk-return profile that catalyzes private sector investment at scale. The result is reliable, clean and affordable energy solutions in developing countries.



**Thematic debt issuances, such as green, blue, or transition bonds, are powerful tools for raising capital for renewable energy projects.** For SIDS, sovereign thematic debt issuances (either a transition bond or other type) would be an ideal conduit for raising finance for the energy transition. Such financial mechanisms could fuel a host of investments in renewable energy either directly by the government or by providing financing to private sector and energy entrepreneurs to develop renewable energy solutions, assessed in line with debt sustainability. Convertible bonds and conventional convertible bonds are other means of raising finance, particularly for corporate entities. These would be particularly suitable for energy companies in SIDS, which are currently state-owned but could gradually transition

to the private sector. However, these instruments must be carefully managed to avoid over-leveraging, with debt sustainability assessments ensuring that the return on investment from renewable energy projects outweighs the costs of the debt incurred.

**Debt restructuring and swaps could be utilized by SIDS to reduce debt burdens while securing financing for renewable energy investments.** By swapping existing debt for new terms tied to renewable energy commitments, SIDS can access favorable financing terms. SIDS have been among the more prolific users of debt swaps, with several innovative transactions happening in Seychelles in 2015,<sup>61</sup> Belize in 2021,<sup>62</sup> and Barbados in 2022.<sup>63</sup>

#### **Box 4. Debt-for-energy swaps**

This proposed innovative instrument could be used more frontally to help finance the energy transition. It works similar to traditional debt swaps but with a thematic intervention related to the energy transition. In SIDS, a transaction could be most effectively worked out in a sovereign framework with bilateral partners agreeing to a debt reduction in return for a government undertaking carefully planned and systematic investments in renewable energy. It could also be worked out in a private setting where private sector debt (perhaps to large state banks or others) could be swapped for effective investments in renewable energy.

**SIDS, with vast ocean and forest resources, can explore innovative revenue sources through carbon credit generation.** Ocean resources are a potent means of sequestering carbon dioxide from the environment. Countries like Suriname, Guyana, Federated States of Micronesia, Palau, and the Solomon Islands boast dense forest cover, exceeding 90% of their land area,<sup>64</sup> positioning them as significant contributors to carbon

emissions capture. Renewable energy generation could be an additional source of credits. Together, the two methods could mobilize resources for the energy transition. For example, Vanuatu has partnered with Switzerland under a UNDP-supported program to sell carbon credits from its solar electrification projects, providing a model for financing through carbon markets.<sup>65</sup>



No. 3

## Adopting an integrated and inclusive 'whole island ecosystem' approach

**Adopting an integrated 'entire island ecosystem' approach that combines renewable energy with sustainable ocean and marine resource management strengthens resilience and promotes holistic development in SIDS.** This can steer the development of existing sectors (e.g., fisheries and tourism) and promote innovation in new ones (e.g., ocean-based energy and biotechnology). Ocean-based energy can catalyze the ecosystem approach, integrating renewable energy technologies with blue economies. Since SIDS have significant potential for wind, tidal, and

oceanic energy, tapping this could support investment in 'blue capital' and advance the leadership of SIDS in protecting and managing ocean and marine ecosystems. Similarly, linking offshore energy systems with existing marine infrastructure, such as aquaculture farms, fulfills energy needs among maritime operations. Furthermore, stimulating investments in innovative blue sectors such as green port development and sustainable marine transportation can improve sustainability by reducing pressure on 'traditional' marine resources while diversifying the economy.<sup>66</sup>



#### Box 5. The Blue Economy for Green Islands Approach

The **UNDP Blue Economy for Green Islands**<sup>67</sup> approach includes building sustainable economic opportunities, creating jobs, rethinking tourism and pursuing innovation. For Small Island Developing States—perhaps better described as **Large Ocean States**—recognizing the interconnectedness of their ecosystems is essential. Due to their size, proximity, and unique vulnerabilities, land and ocean activities form an integrated system where “blue” meets “green,” and both must be managed cohesively.

In the Caribbean, UNDP’s Blue Economy approach has mobilized US\$1 million from the Joint SDG Fund to develop Blue Economy financing frameworks, expand the project pipeline, and secure additional resources for large-scale technical assistance and sustainable finance. Through the Blue Economists Network—established with the University of the West Indies—UNDP has also conducted a public expenditure review in Dominica to support the government’s transition to stronger public financial management, enhancing its ability to support and attract Blue Economy investment.

Moreover, **Blue and Green Islands Integrated Programme (BGI-IP)**,<sup>68</sup> funded by the Global Environment Facility and led by UNDP, will mobilize US\$135 million to help 15 SIDS address drivers of environmental degradation. Aligned with the ABAS program of action, the BGI-IP promotes nature-positive development and reduced ecosystem degradation by valuing nature and implementing nature-based solutions in sectors such as food, tourism, and urban development.

Operating in 15 SIDS worldwide and in partnership with UNEP, FAO, the World Bank, WWF-US, IUCN, and others, the BGI-IP targets key barriers to transform ecosystem management and utilization in SIDS, generating essential global environmental benefits over time.



**Implementing programs that harness the significant potential of the energy transition and blue economy can drive value addition and create jobs in SIDS.** This could emerge from the development of micro-, small- and medium-sized enterprises as well as investments in capacity-building to develop skills and social and human capital, particularly women and youth. By involving youth in the development and implementation of sustainable energy practices, SIDS can harness their creativity, energy, and innovative perspectives to drive positive change.

Likewise, SIDS could encourage women's participation in the renewable energy sector by offering STEM education, leadership training, and career pathways in technical roles. In Guinea Bissau, for example, through a project on the blue economy as a catalyst for green

recovery,<sup>69</sup> micro-, small, and medium enterprises were provided with capacity building, financial, and technical support to improve inclusiveness in value chains, with a focus on empowering youth and women as entrepreneurs.

**Supporting and expanding community-led energy initiatives nurtures local ownership, resilience, and self-sufficiency in SIDS.** From a whole-of-society perspective, protecting and enhancing civic space by empowering citizens and communities to participate in problem diagnosis and co-create energy solutions is critical to a successful energy transition. SIDS should support and expand community-led energy initiatives by strengthening policies that empower local ownership, facilitating funding, building local expertise, and creating collaborative platforms for civic engagement.

#### **Box 6. GEF Small Grants Programme**

The GEF Small Grants Programme (SGP), which provides financial and technical support to local civil society and community-based organizations, has been a pioneer in promoting renewable energy solutions at the community level. One example is the SGP Program in the Dominican Republic,<sup>70</sup> which has financed over 520 community projects in the country, impacting over 10,000 households nationwide, especially in mountainous and border areas, through the installation and operation of over 50 micro-hydroelectric power plants, benefiting more than 20,000 people in rural areas.



**Implementing targeted, gender-responsive policies and projects with an intersectional approach is critical to advancing gender equality in SIDS.** This requires addressing the unique challenges faced by diverse groups of women and girls affected by overlapping socioeconomic inequalities. For instance, in expanding access to clean cooking solutions—where progress lags behind electrification—policies must prioritize Indigenous women and low-income households in outer islands, who often bear the health and time burdens of traditional biomass use due to entrenched caregiving roles and geographic marginalization.

**Similarly, scaling energy solutions like reliable street lighting must be tailored to the safety and economic needs of intersectional populations.** In Fiji<sup>71</sup> and the

Solomon Islands,<sup>72</sup> where high rates of gender-based violence disproportionately affect women and girls, solar streetlights can create safer spaces and expand economic opportunities after dark. Likewise, a solar street lighting project in Vanuatu demonstrated how such interventions can reduce violence against women, improve public safety, and support evening social and economic activities.

**By integrating intersectionality into energy planning—through disaggregated data collection, partnerships with grassroots organizations, and culturally responsive design—SIDS can ensure gender equality efforts uplift all populations, aligning with the SDGs’ commitment to leaving no one behind.**





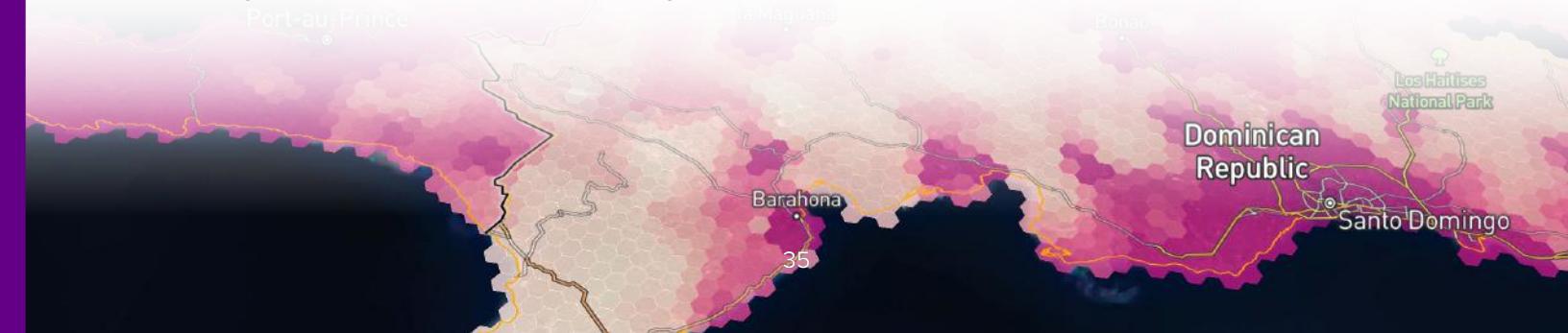
No. 4

## Embracing digital innovation, data and AI

**Deploying digital solutions such as AI, IoT, and blockchain can optimize the entire energy systems value chain, enhancing efficiency in SIDS.** Digital tools enable advanced energy planning, smart electrification, grid optimization, and innovative financial solutions like pay-as-you-go and peer-to-peer trading, expanding affordable access to clean energy. Fiji's digitalFIJI digital transformation programme<sup>73</sup> and the smart islands project<sup>74</sup> in Micronesia, Marshall Islands, Palau, and Kiribati to accelerate regulations related to digital transformation have shown the potential for integrating digital and sustainable energy for development.

**SIDS can prioritize the adoption of digital technologies to overcome barriers of geographical remoteness and high costs that impede economic integration.**<sup>75</sup>

Digital transformation across sectors, from agriculture to clean electrification, can help create sustainable value chains and support local economies.<sup>76</sup> E-commerce, for example, powered by digital infrastructure, can serve as a key driver of economic growth. This approach comprises investing in digital connectivity through e-commerce, local ICT hubs, and Wi-Fi in schools and community centers,<sup>77</sup> which can improve access to essential services and encourage entrepreneurship. In Guyana, for example, this has been achieved through the deployment of over 200 ICT hubs in remote Hinterland regions.<sup>78</sup> These hubs bridge the gap in accessing e-government services, market information, and educational resources. This approach, combined with renewable energy integration, empowers communities, nurtures entrepreneurship, and advances the SDGs.



A notable example includes the Smart Nation initiative in Singapore,<sup>79</sup> which has extended digital and smart technologies (e.g., e-payments, smart urban mobility, and digital public services) across the country.

In another instance, the BlueDIGITAL Project<sup>80</sup> uses digital tools to boost ocean governance, reduce fisheries

crime, and improve the sustainable development of the blue economy ecosystem and value chains from tourism to fisheries in the Caribbean.<sup>81</sup> By connecting key sectors and value chains, governments can collect data to analyze sustainability within these sectors and deploy renewable energy projects accordingly.

#### **Box 7. Empowering Youth for Digital Transformation**

The UNDP Accelerator Lab for Barbados and the Eastern Caribbean exemplifies efforts to engage young people in digital content skills.<sup>82</sup> Similarly, training programs that encompass both technical skills (such as the Internet of Things, programming, and coding) and soft skills (such as digital literacy and entrepreneurship) are driving digital transformation.<sup>83</sup> This approach also encourages young people and entrepreneurs to get involved in innovative sustainable energy solutions and positions them to take part in growing knowledge networks.

**SIDS can create open data platforms and digital readiness assessments to improve transparency in energy financing and policy.** Accessible, data-driven insights enable informed decision-making and attract sustainable investments by increasing project transparency and accountability and reducing perceived risks. By utilizing data analytics, SIDS can also identify

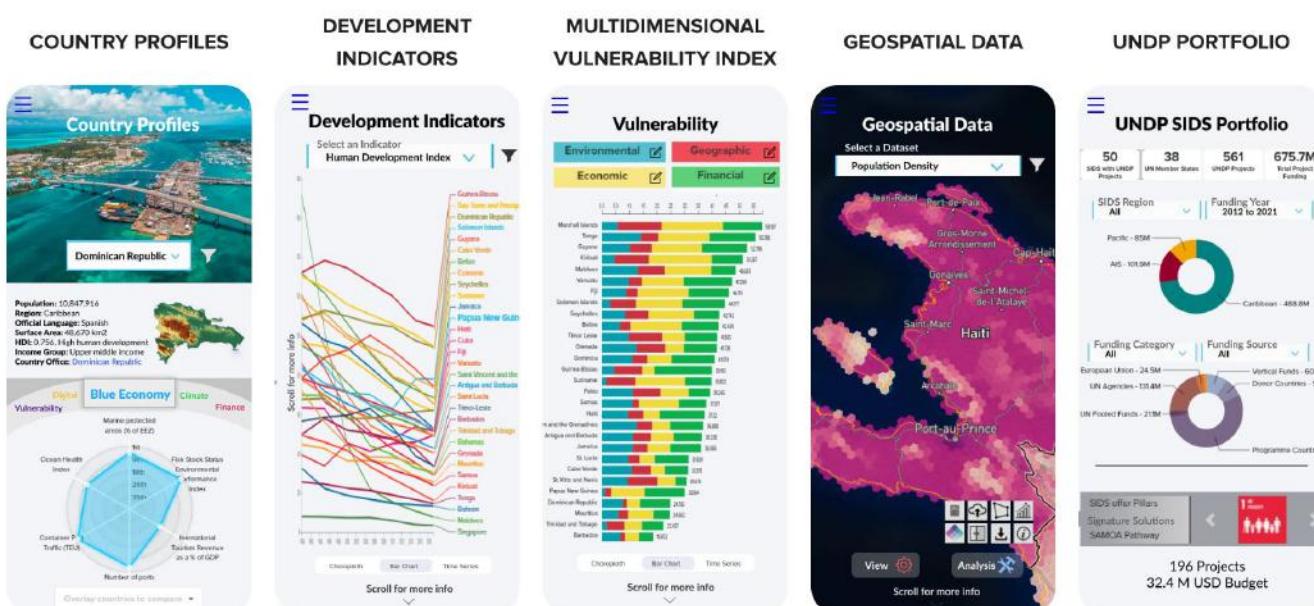
optimal off-grid electricity solutions, such as solar mini-grids or solar home systems, for people in rural and remote communities.<sup>84</sup> Moreover, to overcome the lack of financial resources, digital tech, and data provisions can be integrated into energy financing and help to create an enabling environment for de-risking investments, especially by increasing transparency.



### Box 8. UNDP's Data Platform for SIDS

Data Platform for SIDS<sup>85</sup> allows data-driven policymaking, including through geospatial data, the Multidimensional Vulnerability Index, and other development indicators and country profiles (see Figure 7). It includes more than 4000 indicators, of which over 100 are energy-related, to enable integrated analyses between energy and other sectors, as well as a collection of gridded geospatial datasets on the potential for renewable technologies and other socioeconomic datasets.

Figure 7. From the UNDP SIDS Data Platform



Country profiles for Small Island Developing States with data across the pillars of the UNDP's SIDS Offer, financial statistics, and vulnerability index.

A database of over 4000 development indicators for SIDS, compiled from 22 sources and featured alongside visualization and analytic tools.

A customizable Multidimensional Vulnerability Index (MVI) for SIDS to analyze environmental, geographic, economic, and financial vulnerability.

A SIDS GIS portal and database compiled from more than 80 datasets and research studies with coverage of Small Island Developing States.

A digital tool for analyzing the UNDP SIDS Offer Portfolio across the SDGs, SAMOA Pathway priorities, and six UNDP Signature Solutions.



**Applying a participatory approach to inclusive, data-driven policy formulation strengthens decision-making and stakeholder engagement in SIDS.** Island populations hold generations of place-based knowledge on shifting coastlines, weather patterns, and ecological changes. Actively engaging these communities in co-designing data collection methods and energy projects—such as involving Indigenous fishers in mapping tidal fluctuations to inform solar microgrid placements—enables SIDS to develop systems that are technically resilient, culturally grounded, and socially equitable. This ensures climate strategies reflect local realities, such as integrating Indigenous storm prediction practices—like Vanuatu’s *kastom* weather indicators—into early warning systems powered by renewable energy.

Many Indigenous communities have refined techniques for sustainable resource management and disaster preparedness. Examples include Palau’s bul seasonal fishing bans and Māori lunar calendars for planting. **Renewable energy projects and digital transformation efforts can amplify these practices, creating adaptive networks that combine innovation with ancestral knowledge to predict cyclones, track coastal erosion, and enable rapid response efforts.** Crucially, integrating Indigenous knowledge is not just about cultural preservation—it enhances equity by valuing marginalized voices and applying time-tested strategies for a sustainable future.





No. 5

## Strengthening multi-stakeholder partnerships

**Strengthening intra-regional partnerships can enable SIDS to leverage shared experiences and drive innovation.** These partnerships can facilitate knowledge exchange on energy solutions, technological innovations, and sustainable development models. By creating collaborative platforms for dialogue and project co-design, SIDS can collectively address their unique energy challenges.

To overcome geographical isolation, SIDS should harness digital transformation to create cross-border e-commerce and knowledge-sharing platforms. Sharing unique characteristics as ocean States, SIDS can facilitate market collaborations with each other. By integrating their markets and energy systems through digital tools, SIDS can reduce trade barriers and create new opportunities for energy innovation and collaboration. This process can include the regional integration of SIDS into continental neighbors, such as

Cabo Verde, Comoros, Mauritius, São Tomé and Príncipe, and Seychelles into the African Continental Free Trade Area.

Moreover, given the unique challenges of each SIDS cluster, including limited scale and dispersed populations, leveraging subregional and regional initiatives is crucial for creating impactful and bankable projects. Regional economic groupings, such as the Caribbean Community (CARICOM), the Pacific Community (SPC), and the Indian Ocean Commission (IOC), provide significant support by facilitating economic cooperation, market integration, and infrastructure development, helping SIDS overcome market size limitations and enhance the viability of their sustainable energy projects. Cross-regional initiatives like the Organisation of African, Caribbean, and Pacific States (OACPS) and the Forum of Small States (FOSS) further enhance collaboration by addressing shared challenges, leveraging collective resources, and

promoting sustainable development tailored to the unique needs of SIDS.

**Establishing multi-stakeholder platforms that integrate governments, private businesses, financial institutions, regional organizations, and local communities can help pool resources for energy transition projects in SIDS.** These partnerships should focus on financing, capacity building, and accelerating access to climate technology and innovation. Through multi-stakeholder platforms, joint initiatives, and innovative financing mechanisms, partnerships can catalyze transformative change and accelerate progress toward sustainable energy transitions in SIDS. Additionally, regional access to finance mechanisms, like the Commonwealth Climate Finance Access Hub headquartered in Mauritius, plays a vital role in assisting SIDS to secure necessary funds for their energy transitions by providing technical assistance and building capacity for climate action.

Similarly, regional bodies like the Pacific Centre for Renewable Energy and Energy Efficiency and the Caribbean Centre for Renewable Energy and Energy Efficiency play critical roles in supporting sustainable development and strengthening local capacities.

Specifically, SIDS should actively involve the private sector by facilitating access to low-cost financing mechanisms and creating conducive regulatory environments. Public-private partnerships, concession agreements, and privatization schemes are reliable tools to attract private capital and bridge infrastructure gaps. Such efforts can advance through national just energy transition dialogues involving regulators, banks, academia, and other stakeholders to drive financial and regulatory innovation. An effective partnership network can be further advanced through SIDS' leadership to crystallize regional and global just energy transition strategies in consultation with all stakeholders.



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