

KEY POINTS

- The Asian Development Bank aims to help ports reduce harmful emissions, decrease their carbon footprint, and become more climate-resilient through the Sustainable and Resilient Maritime Fund (SRMF).
- Key areas for Green Port development include energy efficiency, clean energy and fuel, climate resilience, nature-based solutions, waste and resource management, integrated water management, sustainable maritime transport, and alleviation of nuisance and pollution.
- Effective policy and regulation are crucial in mitigating ports' impacts on the environment and the climate.
- The SRMF is expected to provide support at three levels. Upstream support will focus on public policy and institutions. Midstream support will target market functioning; feasibility studies for the advancement, design, and de-risking of Green Port projects; and the expedited development and implementation of green port projects. Downstream support will focus on interventions.

Advancing Green Ports: Funding and Financing for Maritime Decarbonization

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PORTS IN ASIA AND THE PACIFIC: THE BACKBONE OF REGIONAL TRADE

Ports in Asia and the Pacific are essential for domestic and international trade, contributing significantly to economic prosperity. They serve as gateways to access global markets, strengthening their economic potential. The economic impact of ports extends beyond their immediate operations, encompassing a wide range of skills and employment, and supporting services within the maritime and port sectors. Ports are critical nodes for island communities, enabling the import of essential goods such as building materials, fuel, vehicles, machinery, and food, as well as servicing emergency relief and provisions, especially after disasters.

However, port and maritime operations have a significant impact on the environment, and maritime installations are vulnerable to climate change. Port operations and hinterland and coastal transport consume fresh water, energy, and construction materials, and

Notes: In this publication, "\$" refers to US dollars. ADB recognizes "Korea" as the Republic of Korea.

¹ This brief is the outcome of a study done by the Royal HaskoningDHV, under the Asian Development Bank's knowledge and support technical assistance project, Promoting Innovations in Regional Cooperation and Integration in the Aftermath of COVID-19 (TA 6628-REG). It also benefited from the comments from Adrian Sammons (peer reviewer) and Muriel Ordoñez (editor).

generate emissions (such as greenhouse gases) and other pollutants (including wastewater, light, noise, vibration, and dust). The use of fossil fuels in port operations degrades the environment. Ports face direct and indirect impacts from hazards such as sea-level rise and extreme weather events, which can cause delays and closures that result in significant financial, social, and economic damages.²

The Asian Development Bank (ADB) aims to help ports become more climate-friendly, operate with sensitivity to social impacts, and strengthen their climate resilience. ADB proposes to achieve these goals through the Sustainable and Resilient Maritime Fund (SRMF), which will provide blended finance options to support the greening and decarbonization of ports. The initiative seeks to reduce emissions, lower the carbon footprint of port operations, and promote sustainable development while ensuring economic and social benefits.

The gap in funding and financing for maritime decarbonization is significant. According to the Global Maritime Forum, halving shipping emissions by 2050 will require cumulative investments of \$1.0 trillion–\$1.4 trillion, or an average of \$50 billion–\$70 billion annually over 20 years. Achieving full decarbonization by 2050 would demand an additional \$400 billion, bringing the total investment needed to \$1.4 trillion–\$1.9 trillion. A 2023 United Nations Conference on Trade and Development (UNCTAD) report highlights the substantial investment required to decarbonize shipping by 2050. Some estimates suggest that an additional \$8 billion–\$28 billion will be needed annually, and a preliminary assessment estimates that the funding gap will exceed \$10 billion in 2029–2034.³ The estimate is considered conservative, as it accounts for maritime transport, the number of ports, the varying levels of green practice adoption, the diverse range of investment costs, and the evolving factors driving investments in port sustainability.

To determine the necessity and structure of the SRMF, the assessment team

- (i) comprehensively reviewed more than 100 international and national documents: policies, strategies, plans, laws, and legislation related to environmental protection, energy efficiency, renewable energy, climate change, and sustainable development in ADB developing member countries (DMCs);
- (ii) identified suitable ports for digital surveys, interviews, and site visits, consulting a diverse range of sources, including World Port Source, Seacast, and Asian Port Network;
- (iii) visited Nhava Sheva, India; Teluk Lamong, Indonesia; Hai Phong, Viet Nam; and Apia, Samoa, which represent a mix of large and small ports, covering various commodities and including an island lifeline port; and
- (iv) is curating a collection of best-practice examples, chosen for their relevance to green port interventions and funding strategies.

WHAT IS A GREEN PORT?

A port is green when it aims to reduce its ecological footprint and increase its adaptive capacity to environmental conditions and climate change. The transition to a green port will proactively identify and tackle the environmental and social impacts of its infrastructure and operations. Its main goals are to minimize risks, implement robust solutions, and strengthen resilience, fostering a sustainable environment.

By adopting a life-cycle approach, green ports strive to minimize their ecological footprint and actively improve the environment. This commitment encompasses all port activities, from initial planning to daily operations, integrating resilient design and practices. Through these efforts, a green port not only ensures its own sustainability but also significantly supports local, national, and international policy goals.

A green port is not static; it evolves over time. It may take progressive steps to reduce its environmental and social impacts, each signifying a milestone in its greening journey. These steps, often aligned with the United Nations Sustainable Development Goals, can be used to assess a port's maturity and identify opportunities for further improvement.

NEED FOR A GREEN PORT-FOCUSED INITIATIVE

In structuring the SRMF, the key areas for green port development are as follows:

- **Energy efficiency.** This is the ability to maximize productivity and achieve desired outcomes while minimizing energy consumption. Energy efficiency can be accomplished through a variety of strategies, including scheduled higher productivity targets, simple energy monitoring and analysis to identify areas for improvement, the use of more advanced technologies such as switching to LED lighting, employment of efficient refrigeration systems, or the transition to electric propulsion systems for port workboats and harbor tugs. As ports move toward cleaner energy sources such as electricity to reduce reliance on fossil fuels, understanding and optimizing energy demand become crucial to keep them running efficiently.
- **Clean energy and fuels.** With minimal environmental impact, clean energy and fuels are crucial for reducing carbon emissions, reliance on fossil fuel, and local pollution. While renewable energy sources such as solar and wind offer significant potential, their intermittent nature poses challenges that can be mitigated by battery storage solutions. Upgrading infrastructure for electrical equipment and vehicles, while expensive, can be optimized through smart charging systems that adjust to demand. Shore power, increasingly adopted by vessels to meet

² R. D. McIntosh and A. Becker. 2019. *Expert Evaluation of Open-Data Indicators of Seaport Vulnerability to Climate and Extreme Weather Impacts for US North Atlantic Ports*. *Ocean and Coastal Management*. 180. 104911.

³ UNCTAD. 2023. *Review of Maritime Transport 2023: Towards a Green and Just Transition*.

energy efficiency standards, places significant demands on port infrastructure, requiring careful investment planning. Future shipping demands will likely include low- and zero-carbon fuels such as liquefied natural gas, biodiesel, methanol, ammonia, and hydrogen. These options require robust safety protocols and localized production capabilities because of their unique properties. Transition fuels such as biodiesel and liquid natural gas can leverage existing infrastructure while reducing emissions.

- **Climate resilience.** The capacity of a port to maintain functionality and recover from climate-related disruptions is essential for ensuring the continued efficient operation and environmental improvement of port facilities. Given the projected increase in the severity of oceanic storms, sea-level rise, and extreme temperatures, evolving climate conditions must be considered when planning port infrastructure and operations. Failure to do so can result in significant disruptions to cargo handling and staff safety, leading to increased costs, delays, and decreased customer confidence. Therefore, integrating disaster management and climate-resilient strategies into planning, operation, and construction is paramount for a port's long-term sustainability and success.⁴
- **Nature-based solutions.** These solutions offer a powerful means of enhancing biodiversity, establishing ecological corridors, replanting, and mitigating the harmful effects of pollutants within port development projects. They can include sustainable drainage systems that filter pollutants, and infrastructure designs that harness the energy of extreme weather events, such as shading structures and wave energy converters.
- **Waste and resource management.** In the maritime industry, waste and resource management involves the systematic handling, capture, treatment, and utilization of materials to minimize environmental impact and maximize efficiency. Regulatory requirements are in place to ensure responsible practices, but regional supply chains have different capacities to manage diverse waste streams. Promoting circularity through recycling and waste reduction offers significant benefits. It can improve air quality, conserve resources, and unlock market opportunities for ports and their supply chain partners.
- **Integrated water management.** As a collaborative approach encompassing all facets of the water cycle, integrated water management is increasingly vital as water scarcity intensifies globally. Prioritizing essential uses, green roof system water capture, and the curbing of unnecessary consumption are paramount. Effective sewage and pollution management within ports is crucial to prevent contamination of waterways.
- **Hinterland connectivity.** This involves reducing reliance on fossil fuels and minimizing environmental and social impacts. Effective approaches include investment in charging and fueling infrastructure to encourage its adoption and reduce emissions, efficient vehicle management to minimize idling time and optimize vehicle routes within the port, and a modal shift to

encourage the transition of cargo and passenger transport from roads to more sustainable modes such as rail or waterways.

- **Nuisance and pollution.** In port operations, nuisance and pollution encompass the harmful effects of waste, emissions, dust, vibration, noise, light spill, and traffic on communities and the environment. These disturbances can include minor inconveniences and significant health and ecological hazards. Along with suitable legislation and policy, effective management and mitigation strategies are crucial for ensuring sustainable and responsible port operations, promoting the well-being of surrounding communities, and preserving environmental quality.

Effective policies and regulations are essential to mitigating the ports' impacts on the environment and the climate. However, no legally binding international standards specifically apply to sustainable port development. The International Maritime Organization sets ambitious targets for reducing emissions by 2050,⁵ which will significantly increase the pressure on ports to upgrade their infrastructure.

In countries with weak national policies and regulations, ports lack the incentives or legal obligation to adopt green initiatives. Thus, strong government frameworks are crucial for the development of green ports.

BEST PRACTICE EXAMPLES

In recent years, advancements in greening technology at ports have been rapid, leading to significant benefits. The following are examples of systems, processes, and management-driven regimes that have resulted in significant positive outcomes for port operators engaged in these developments:

- Portsmouth International Port collaborated with Swanbarton, Energy Systems Catapult, and MSE International to pilot the Port Energy Systems Optimization (PESO) smart energy system. PESO utilizes AI to optimize battery usage by learning from historical energy consumption patterns, ensuring sufficient storage capacity to harness on-site renewable energy or capitalize on low-priced grid energy. The PESO intelligent system efficiently distributes power to meet various demands, including vessel supply.
- A European port, collaborating with academics, port operators, equipment providers, and Royal HaskoningDHV, developed advanced energy flow models for container terminal cranes. The collaboration led to the creation of a suite of design tools that empower port clients to build business cases supporting energy efficiency investments, enabling the integration of sustainable energy solutions and energy storage systems. The project resulted in substantial annual fuel savings and emission

⁴ R. D. McIntosh and A. Becker. 2017. Seaport Climate Vulnerability Assessment at the Multi-Port Scale: A Review of Approaches. In I. Linkov and J.M. Palma-Oliveira, eds. *Resilience and Risk: Methods and Application in Environment, Cyber and Social Domains*. Springer.

⁵ International Maritime Organization. 2023. *2023 IMO Strategy on Reduction of Greenhouse Gas Emissions from Ships*.

reductions of 40%–60%, establishing a replicable model for cost-effective implementation of these technologies while enhancing operational efficiency.

- By 2022, the Port of Rotterdam had fully transitioned to LED lighting, while the Port of Hamburg reduced energy demand by up to 25% through similar measures. Associated British Ports in the United Kingdom implemented a differential lighting strategy, tailoring lighting levels to specific activities within each zone, resulting in energy (and cost) savings of up to 15%.
- In December 2018, a hydroturbine prototype was installed at the Port of Antwerp following comprehensive water-flow and harbor behavior studies. After 235 hours of testing, the collected data validated a compelling business case for this renewable energy source. Initially designed for 100-kilowatt output, the three-bladed vertical axis turbine exceeded expectations, demonstrating the potential for 150-kilowatt generation. Integrating multiple hydroturbines into the port's locks—potentially five or more—could significantly expand energy generation capacity.
- The ports of Antwerp, Bremen, Hamburg, Haropa (Le Havre, Rouen, and Paris), and Rotterdam signed a memorandum of understanding to jointly provide shore-side power facilities for container vessels exceeding capacity of 14,000 twenty-foot equivalent units by 2028.
- The Maritime and Port Authority of Singapore and the Port of Rotterdam have signed a memorandum of understanding to create the world's longest green and digital corridor, designed to facilitate low- and zero-carbon shipping routes.
- The Port of Newcastle in New South Wales, Australia, is exploring the development of a 40-megawatt hydrogen hub, bolstered by a \$1.5 million grant from the Australian Renewable Energy Agency. The initiative aligns with broader agreements between the governments of Australia and Singapore to stimulate investment in low-emission technologies and create jobs.
- The Caribbean's largest solar park, Montecristi, Dominican Republic, not only powers about 50,000 homes but also significantly reduces dependence on imported diesel, leading to substantial emission reductions and improved energy resilience. Similar projects are underway in St. Kitts and Nevis.
- In 2013, Storm Sandy inflicted \$2.2 billion in damages on the Port of New York and New Jersey, causing a weeklong shutdown of the New York Container Terminal, which handled more than 1.5 million twenty-foot equivalent units annually. In response, the port invested \$59 million in flood barriers and predictive technology to bolster its resilience against extreme weather events and minimize disruptions to trade.
- The Port of Rotterdam, after modeling potential flooding scenarios, now mandates that all new construction projects meet the predicted flood levels for 2100.
- The United Kingdom Environment Agency developed the Estuary Edges guidance to incorporate ecological

enhancements into port and estuary flood defense projects, using artificial structures.

BARRIERS TO IMPLEMENTATION

A digital survey of port stakeholders underscored the following barriers that hinder Green Port interventions:

- **Insufficient funding and financing.** The high upfront costs and long-term returns on investment for Green Port projects make them financially challenging.
- **Poor policy and regulatory environment.** The lack of clear policies and regulations can create uncertainty and frustrate investment decisions. Application processes can be complex and time-consuming. Projects and interventions can be risky.
- **Inadequate technical capacity.** Traditional port management structures concentrate on operational processes and require dedicated management to oversee greening solution initiatives.
- **Lack of stakeholder awareness.** Stakeholders are not always aware of interventions and must find their way through an elaborate network of organizations and initiatives.

Figure 1 presents the principal barriers to the implementation of Green Port projects.

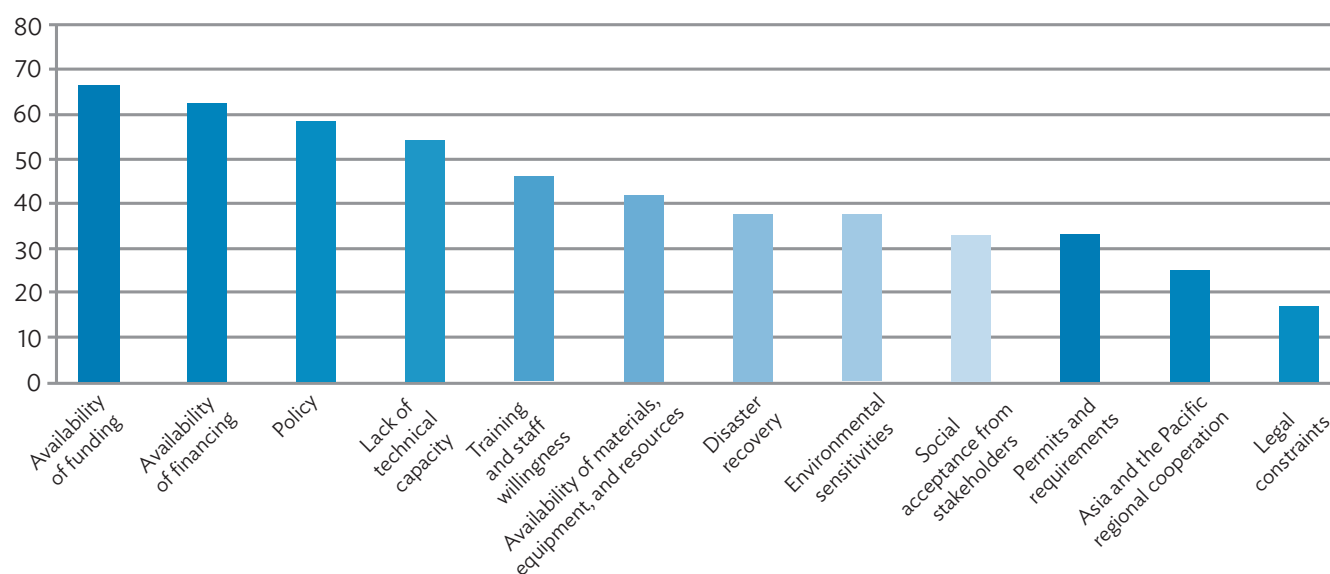
EXISTING FUNDING AND FINANCING INITIATIVES

Several funding and financing facilities can support ADB members and marine port organizations in decarbonizing ports and increasing their climate resilience (as listed in the table below). Besides the Maritime Singapore Green Initiative and the United States Clean Ports Fund, however, none specifically target port infrastructure or have the same goals as the SRMF. Two initiatives with some overlaps are the Ocean Resilience and Coastal Adaptation Financing Partnership Facility (ORCA-FPF) and the Catalytic Finance Foundation (formerly R20).⁶

To bridge the funding and financing gap, the SRMF aims to support DMCs in greening and decarbonizing ports by providing technical assistance (TA) loans, project concessional debt, corporate sustainability-linked loans (SLLs), grants, guarantees, and equity participation. These will support (i) policy and capacity development; (ii) knowledge sharing and regional collaboration; and (iii) accelerated project origination, preparation, and realization.

⁶ ADB. 2023. *Establishment of the Ocean Resilience and Coastal Adaptation Financing Partnership Facility*; and Catalytic Finance Foundation. *Catalytic for Your Climate*. The ORCA-FPF will include the Ocean Resilience and Coastal Adaptation Trust Fund, a multidonor fund to support technical assistance, grants and grant components of investment projects, and any other activities that ADB may agree upon with financing partners.

Figure 1: Main Barriers to the Implementation of Future Green Port Projects (%)



Source: Authors.

Active Green Funding and Financing Initiatives Across Asia and the Pacific

Facility Name	
ADB Blue Bonds	Global Climate Action Partnership
ADB Blue Pacific Finance Hub	Global Energy Efficiency and Renewable Energy Fund
ADB Blue SEA Finance Hub	Global Environment Facility
ADB Green Climate Fund	Green Investment Group Asia
ADB Ventures	Greenko Group
ASEAN Catalytic Green Finance Facility	International Finance Corporation
Asia Green Fund	International Renewable Energy Agency
Asian Clean Energy Fund	Japan International Cooperation Agency Climate Finance
Australian Climate Finance Partnership	Japan Renewable Energy Corporation
Australian Renewable Energy Agency	Korea Green Growth Trust Fund
BIS Asian Green Bond Fund	Lloyd's Register Silk Alliance
China Development Bank	Macquarie Asia Infrastructure Fund 3
Clean Cargo Initiative	New Energy Nexus
Clean Energy Finance Corporation Australia	Ocean Resilience and Coastal Adaptation Financing Partnership Facility, and ORCA Trust Fund
Clean Energy Financing Partnership Facility	Pacific Blue Shipping Partnership
Climate and Clean Air Coalition	Pacific Ports Clean Air Collaborative
Climate Investment Funds	PROBLUE
Climate Investor One	Renewable Energy and Energy Efficiency Partnership
ClimateWorks Foundation	Singapore Green Plan 2030
EcoPorts Network	International Cooperation and Development Fund in Taipei,China
EIB Global	The Adaptation Fund
Equis Development Pte Ltd	Tropical Asia Forest Fund 2
Global Center on Adaptation	World Ports Climate Initiative Program

ADB = Asian Development Bank, ASEAN = Association of Southeast Asian Nations, BIS = Bank for International Settlements, EIB = European Investment Bank, ORCA = Ocean Resilience and Coastal Adaptation, SEA = Southeast Asia.

Source: Authors.

SUSTAINABLE AND RESILIENT MARITIME FUND (SRMF): SUPPORT MECHANISMS

The SRMF can take on different financial roles:

- **Funds provider.** It would make funds available to greening and port decarbonization initiatives and projects, directly and on its own, from a source it manages itself.
- **Funds arranger.** It would arrange funds for beneficiaries through other sources, leveraging its partnerships within financing partnership facilities to secure funding.
- **Funds facilitator.** Acting as a central hub, it would guide beneficiaries toward funds from other sources, coordinating and streamlining access to various financial support mechanisms.

While the SRMF can perform all these roles simultaneously, it is best suited to be a funds provider. It is designed to offer a wide range of financial support modalities, mirroring those available through other ADB funds:

- **Loans**, including commercial and concessional loans, secured or unsecured, and structured at the project or corporate level. Corporate loans can be designed as SLLs, aligning financial terms with the SRMF's environmental goals.
- **Grants**, which are nonrepayable funds provided for specific projects or activities that align with the SRMF's objectives.
- **Equity**, or ownership interest in a project company or property, typically acquired through the purchase of stocks or direct investment. Equity participation will be limited to project-specific legal entities (special-purpose vehicles) to avoid potential governance and compliance issues associated with investing in port operators or authorities.
- **Guarantees**, or a commitment to assume financial responsibility in the event of default or nonpayment. They are often required by lenders as a condition for granting a loan.
- **Direct charges**, which bypass the need for a project setup.

While all modalities have potential value, short-term priorities will focus on TA and grant funding to meet the immediate need for policy development, investment planning, and project preparation in many DMCs. ADB has an opportunity to standardize the process through a structured port greening and decarbonization tool kit that would reduce the need for repetitive TA assignments at each site and streamline implementation across various locations. As the market for port decarbonization and greening matures, the focus will gradually shift to loans and equity investments, which are more suited for supporting bankable projects and larger-scale investments. This approach aligns with the evolving needs of DMCs.

ADB sovereign assistance is directed toward DMC governments and sovereign entities, while nonsovereign assistance targets private enterprises, institutions, and selected public sector entities without sovereign guarantees. Historically, sovereign support has been ADB's primary focus, accounting for more than 90% of its portfolio. However, nonsovereign operations are crucial in

catalyzing investments and capital flows within DMCs through direct financing and risk-mitigation instruments. This approach aims to promote economic development while ensuring the financial sustainability of ADB's operations.

Given the significant funding needs of port-operating companies, which often involve a mix of public and private sector participation, the SRMF should prioritize providing nonsovereign financial support. Some private port concessions already have measures in place to reduce the environmental impact of operations, and those aligned with multinational organizations may be able to self-fund their own greening initiatives. However, doing so requires specific organizational capabilities. In addition to developmental considerations, the SRMF must concentrate on credit strength, financial viability, and good corporate governance. Nonsovereign financing carries commercial and political risks, which must be assessed and managed in accordance with ADB standards and industry practices. The SRMF should consider these factors when structuring its initiatives.

Potential beneficiaries include the full range of maritime port actors, including national governments and ministries, regional government organizations, port authorities, government authorities (such as customs), port operators, terminal operators and stevedores, port service providers, and port users (excluding international shipping clients).

The SRMF support should be available to public and private entities that meet certain criteria, regardless of ports' organizational structure, and emphasize support for private entities to address unmet port financing needs.

The SRMF can provide support at different levels:

- **Upstream.** Focus on public policy and institutions; the development of Green Port policies, strategies, and long-term investment plans; and the creation of an environment that inspires and incentivizes Green Port initiatives. Beneficiaries are exclusively within the public sector, with activities mainly involving TA and capacity building for policymaking or institutional reforms. As a first step, prevailing legislation and regulations in the host country should be assessed to identify the legal framework under which the port operates. This includes clarifying the port's statutory environmental responsibilities and distinguishing between mandated environmental controls and areas that fall outside declared regulations. Such an analysis will help ensure that Green Port initiatives align with existing legal structures while identifying gaps that may require policy or regulatory adjustments.
- **Midstream.** Focus on market functioning; feasibility studies for the advancement, design, and de-risking of Green Port projects; and expediting of the development and implementation of Green Port projects. Beneficiaries are from the public and private sectors. Investments in Green Port infrastructure can strain the financial capacity of ports, and the long-term return on investment can be uncertain or slow. Activities include tackling market barriers and providing capacity building, small-

scale grants, and TA to help navigate the complex regulatory landscape and diverse policy frameworks and align sustainability goals with investor expectations. A combination of public and private sector support is often necessary to build a pipeline of downstream projects, creating a more attractive and sustainable investment environment for all stakeholders.

- **Downstream.** Focus on capital project execution and financial support for Green Port interventions. Beneficiaries are from the public and private sectors. TA and direct financial support encompass direct financing assistance, project (viability gap) funding, concessional lending and blended finance, equity investments, and project management and execution support.

The optimal mix of support levels will be determined based on market needs, further research, and consultations with potential funding sources. While the demand for upstream and downstream support varies across the region, the availability of viable projects and investment opportunities will influence the balance between TA, grants, and financial investments. The SRMF's success will depend on aligning its support with the specific requirements and priorities of ports while ensuring the financial sustainability of its initiatives.

In addition to specific greening and decarbonization initiatives, the SRMF can finance projects that bolster ports' overall resilience and sustainability. These projects can be integrated with core initiatives or proposed independently. They may focus on external factors such as pandemics; conflicts; disasters; or internal environmental, social, and governance factors such as inclusivity, gender equality, health, and community engagement. The SRMF strongly encourages projects that contribute to regional cooperation and integration.

SRMF STRUCTURE

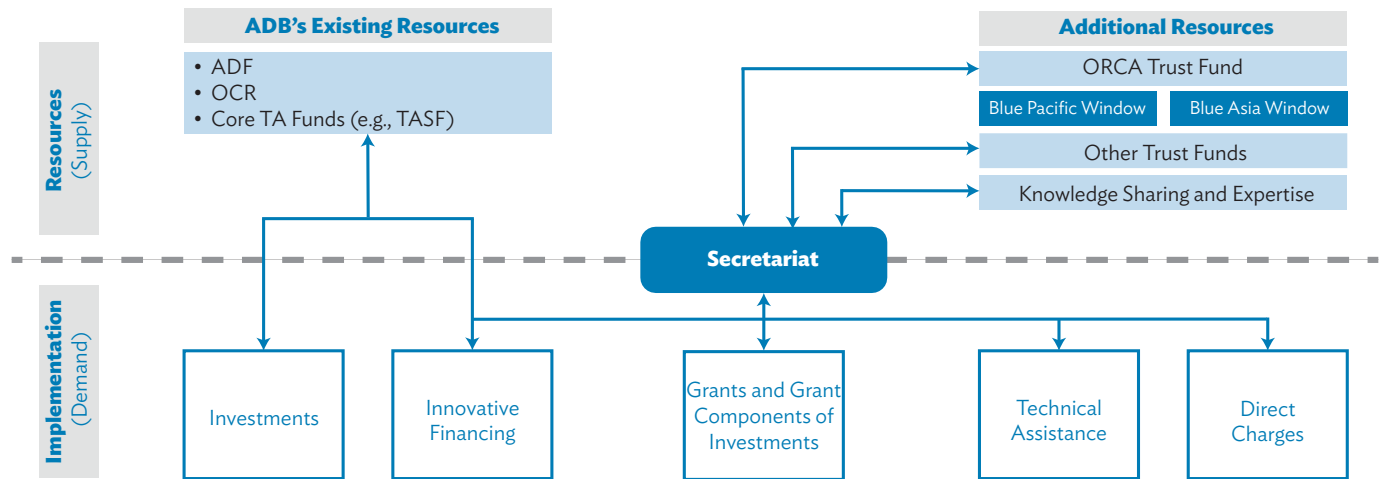
The SRMF can achieve its goals by establishing a dedicated trust fund aimed at greening and decarbonizing ports in Asia and the Pacific. A multidonor and multipartner SRMF is proposed to be placed under the ORCA-FPF, but only if the fund (i) allows beneficiaries to access it directly, (ii) has the option to differentiate and optimize application processes to increase its accessibility, (iii) can set up a tailor-made investment decision process, (iv) has the option to amend its governance structure, and (v) may participate in projects through equity investments.

Much of the ORCA-FPF organization (Figure 2), including the secretariat, facility manager, partnership group, working group, and executive committee, can be utilized and expanded upon, but a trust fund manager for the SRMF must be appointed.

Potential SRMF funders can be sourced from ADB members; development financial institutions; and other trust funds, organizations, and institutions. The SRMF will target up to \$1 billion to start with, depending on interest from donors and their subsequent requirements.

Projects or requests can qualify for the SRMF support if they (i) are submitted by a DMC organization; (ii) align with the SRMF goals; (iii) help improve Green Port criteria; and (iv) adhere to ADB's general guidelines, including but not limited to those related to diversity, social responsibility, and anticorruption measures.

Figure 2: Ocean Resilience and Coastal Adaptation Financing Partnership Facility Structure



ADB = Asian Development Bank, ADF = Asian Development Fund, OCR = ordinary capital resources, ORCA = Ocean Resilience and Coastal Adaptation, TA = technical assistance, TASF = Technical Assistance Special Fund.

Source: ADB.

NEXT STEPS

Establishing the SRMF is crucial to help green and decarbonize ports in Asia and the Pacific. By narrowing the funding gap, dismantling barriers to implementation, and leveraging existing initiatives, the SRMF can play a pivotal role in promoting sustainable and resilient port development. The proposed structure as a multidonor trust fund under the ORCA-FPF offers a promising approach to maximize the fund's impact and ensure its long-term sustainability.

The following actions are recommended:

- **Communicate within ADB.** Initiate discussions with the ORCA-FPF and ADB departments to ensure the integration of the SRMF under the ORCA-FPF. If the SRMF is not placed under the ORCA-FPF, its structure will remain unaffected.
- **Engage with potential financing partners.** Continue engaging with potential financing partners to identify their strategies and priorities, secure funding, and determine the size and timeline of the SRMF. Draw up an elevator pitch about the SRMF to raise awareness and attract interest from potential financing partners. Identify suitable financing partners.
- **Determine the SRMF's size and timeline.** Market-test the initial target fund size of up to \$1 billion. The final size will depend on the appetite of potential financing partners and the operational duration of the SRMF, which will be at least 10 years.
- **Share knowledge with potential beneficiary ports.** Conduct capacity-building and knowledge-sharing activities to strengthen regional cooperation. Sponsored consultancy work, annual seminars, and online webinars will be important sources of deals and projects.
- **Identify potential multitrust funds for the SRMF under the ORCA-FPF.** To better serve market demand, the first SRMF trust fund may focus on upstream and midstream projects. ADB may plan the next SRMF trust funds to focus on midstream and downstream projects.
- **Develop sustainability-linked loans.** Create such instruments to incentivize Green Port initiatives. While the SRMF will be well positioned to finance specific interventions (ring-fenced projects), offering corporate financing through SLLs could also meet a critical market need. The SLLs would link loan terms to the SRMF goals. However, successful SLL implementation requires the drawing up of predefined, maritime-specific sustainability targets or key performance indicators that can be incorporated into debt term sheets. Currently, such indicators are not readily available. Therefore, the SRMF should prioritize the development of an SLL instrument tailored for the maritime sector.

About the Asian Development Bank

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