

Navigating Island Futures in Transport

A guide to developing national transport strategies for Small Island Developing States

1st Edition | November 2021

Executive summary

Introduction

Scattered through the world's oceans are 38 Small Island Developing States, or SIDS. While hugely diverse in their culture and history, as island states they all rely on affordable, reliable, and safe transport options for their social and economic well-being.

SIDS are particularly vulnerable to the impacts of climate change. Because of this – even though SIDS collectively produce less than 1 per cent of global emissions – most have made significant commitments to decarbonise their economies, while at the same time advocating strongly for greater action by others.

As part of their efforts, many SIDS are now focusing on how people and goods move around their islands – in particular, how to decarbonise these transport systems while building greater social and economic resilience.

What is a national transport strategy?

A national transport strategy (NTS) maps out how a country's transport system will develop over the medium to long term – say 15 to 30+ years. An NTS describes a shared vision of a sustainable transport system and sets out the policies, investments and actions needed to achieve it over time. Importantly, an NTS also provides a framework for coordinating and aligning national and sub-national governments, development partners, and the private sector.

This guide – *Navigating Island Futures in Transport* – aims to help SIDS achieve a sustainable future in transport by providing guidance on how to develop long-term and integrated national transport strategies.

Why focus on transport?

Small island countries face many pressing issues – including the impacts of climate change, energy insecurity, health issues, and other ongoing challenges inherent to the remoteness and small size of SIDS. Transport cuts across every aspect of life in

the islands and has profound implications for the quality of life and resilience of island communities.

Domestic transport uses around half of all primary energy in SIDS, and so is a key area for emissions reductions. Efforts to decarbonise transport systems will reduce fuel use, helping to improve energy security and reduce countries' vulnerability to oil price shocks. Efforts to reduce traffic congestion by using more active modes of transport can also help reduce the worst impacts of non-communicable diseases (NCDs). Improving basic transport services will increase resilience to natural disasters and promote the viability of life in rural and outer island communities. Innovations around low-carbon maritime transport can incorporate both new and old technologies, reinvigorating indigenous engineering and design.

How an NTS can help island countries

In small island countries, transport development often occurs on an *ad hoc* or project-by-project basis. While sector plans and infrastructure investment plans do sometimes exist, these are often developed without a long-term view of a country's overall aspirations and challenges. In addition, island countries are setting ambitious GHG reduction targets often without good information on the cost or effort required to achieve them.

At the same time, development partners are ramping up their support for SIDS to both decarbonise and adapt to the increasing impacts of climate change.

There is a window of opportunity here to ensure the increased climate change finance is used wisely on transformative investments that truly help countries address the myriad challenges. The way to identify these transformative investments is through properly conceived, carefully developed, long-term integrated transport strategies. These strategies identify investments and actions today that will enable a sustainable transport future.

About this guide

This guide is fundamentally practical. To that end, it collates a toolbox of relevant concepts, methods, technologies, and processes, and provides links to further resources. It describes the steps to develop a shared vision for sustainable transport and to design pathways to achieve that vision. It offers advice on the skills and capability, and the suggested timeframe for a strategy process.

The approach draws on methods that enable the imaginative and transformative thinking needed to achieve a truly sustainable future. It emphasises dialogue, systems thinking, and telling stories to build a shared understanding of the changes required. It draws on technical analysis to investigate and weigh options and make considered decisions.

Importantly, the guide reinforces the need for country leaders and development partners to work together. It falls to development partners to participate and align projects, investments, and policy support with these long-term, integrated strategies.

Who can use this guide



For governments, the guide provides an overview of the components of a national transport strategy, the benefits it brings, what such a strategy should consider, the process, time commitment, and expertise needed. It can be used to develop terms of reference for consultants. It provides a 'menu' of possible strategies, policy measures, and technologies. It highlights the need for close collaboration with development partners and provides a shared framework for these discussions.



For development partners, the guide can help respond to requests from partner countries for transport strategies. Where development partners carry out procurement, it will help craft terms of reference for consultants. It provides a catalogue of possible strategies, policy measures, and technologies, and discusses the wrap-around support such approaches will require. It can provide a shared framework for discussions with partner countries and coordination with other development partners.



Consultants and practitioners will find a framework for designing and managing the process to create a sustainable national transport strategy. This emphasises the need to establish the authorising environment, to secure commitment from government and funding partners, and to ensure the process is focused on involving decision-makers at every step. The menu of strategy, policy measures, and technology options will support improved design of appropriate actions and investments.

Principles of the approach

The guidance embodies these principles:

- **Country-driven:** Transport sector strategies should articulate a country's national values and development aspirations and establish the authorising environment.
- **Comprehensive and integrated:** Strategies should consider all the key aspects of a multi-faceted transport system – across land, sea, and air.
- **Process-oriented:** The focus is on facilitating strategic dialogue between key players – the government, transport sector, and development partners and investors. All key decision-makers need to engage with the strategy's vision and pathways, and key choices and trade-offs.
- **Flexible:** The process should be adapted to suit the local context, the current transport system's complexity, and the government's appetite for change.
- **Human-centred:** Human needs for social connection, economic participation, and access to goods and services should be at the centre of a transport system's design.
- **Balancing ambition and feasibility:** Robust strategies and pathways will balance financial, social, and workforce considerations, and identify appropriate institutional and policy reforms.
- **Long-term orientation:** Long-term strategic thinking will inform planning and investment in the short- to medium-term, allowing the government and its development partners to work towards a clearly articulated vision.

It is important to note that this guide is not intended to be rigidly prescriptive – governments and development partners work in a complex environment where decision making is influenced by competing priorities, trade-offs, and constraints. Rather, the guide provides a framework to be adapted for each situation, and the resulting process may not be straightforward or linear, involving iteration and a bit of 'messiness'. This is entirely appropriate.

Summary of the guide

Navigating Island Futures in Transport comes in three parts (not including this executive summary).

Part I: A 21st century approach to island transport systems.

Part I provides an overview of the transport challenges and opportunities facing SIDS. It then outlines the emerging global paradigm for sustainable transport systems. Finally, it touches on how developing long-term strategies can help enable the transformation to a sustainable future.

Part II: How to design a transport strategy – a 5-phase process.

This part will help you design and facilitate a 5-phase process for developing a national transport strategy. The guidance provides ideas and tools for each phase of the process. Each phase reinforces the importance of meaningful discussions between decision-makers.

Part III: Menu of strategies and technologies provides a catalogue of strategies, technologies, policies, and other measures that have already been assessed for their suitability for small island countries. It means you won't have to start from scratch in your search for practical and appropriate solutions.

- **Part IIIA: Menu of strategies** – presents a range of strategies and approaches to help islands shift towards sustainable transport systems.
- **Part IIIB: Menu of technologies** – this section presents transport technologies for land, sea, and air transport. These have been assessed for their suitability for small island countries across different time horizons. Note that, given how quickly transport technology is changing, the information in Part IIIB will be reviewed regularly.

While Parts II and III work together to provide practical, user-oriented guidance and tools on how to develop a long-term transport strategy, Part III may also be used to support the improved design of stand-alone transport-related projects.

Part I: A 21st century approach to island transport systems

Part I provides background and connect to Parts II and III by the discussing the challenges and opportunities for island transport system, and the emerging global paradigm for sustainable transport.

Transport challenges in SIDS

Transport to and within SIDS is usually characterised by long distances and low volumes, giving rise to many challenges. On land, transport distances are smaller but other issues arise. Many outer islands and other remote communities depend on transport for economic opportunities, yet high costs make it difficult to operate a dynamic, connected economy.

Poverty is an exacerbating factor, meaning that often people cannot afford quality transport services.

Transport systems are subject to natural hazards, many of which are likely to be exacerbated by progressing climate change. At the same time, transport systems can have significant negative impacts on the environment.

Development partners play an important role in shaping economic development, including transport systems. For governments that are small and capacity-constrained, managing funding from donors and coordinating their projects is both important and difficult.

Transport opportunities in SIDS

Developing a national transport strategy offers a way to consider and address the transport challenges described above. But it also offers a way to make the most of opportunities to:

- adapt to climate change and improve disaster resilience
- advance SIDS' climate leadership and reduce GHG emissions
- integrate transport into spatial planning and rural development
- strengthen and revive local and traditional practices and culture
- integrate planning of electricity and electrification of transport
- build infrastructure with multiple functions
- replace some transport activities with information and communication technology (ICT)
- improve health and social inclusion.

A new sustainable transport paradigm

Globally, thinking about and planning for transport systems is undergoing major changes. For many decades the focus on the use of the private car has produced towns and cities adapted and designed around roads. The push to decarbonise transport, to improve the liveability of our urban environments, and the opportunities afforded by new technology is driving a paradigm shift, and already transforming how governments think about moving people and goods.

The key conceptual shifts we need to make to plan for sustainable, low carbon transport futures include:

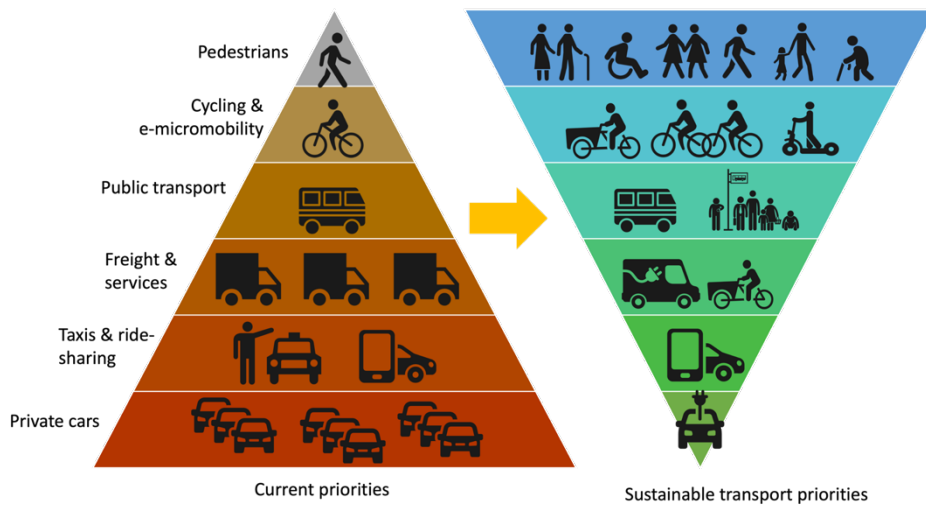
- from organic/incremental to planned/ transformative
- from 'predict and provide' to vision-led 'decide and provide'
- from fossil fuels to zero emissions
- from mobility to accessibility
- from cars first to pedestrians first
- from asset-based to service-based
- from single components to integrated systems
- from imported ideas to locally appropriate, context-specific solutions.

Building capability for transformation

There are no simple solutions to decarbonising transport on island countries while keeping the form of transport essentially the same – the commitment to zero emissions and resilience to climate change will require nothing short of a transformational approach to reducing dependence on motorised transport and rethinking development patterns.

To support this transformation, better development partner coordination is needed. And one of the best ways to achieve this is for partners to work with SIDS to develop long-term integrated transport strategies.

This journey of joint exploration, deliberation, and decision-making creates a shared vision for the future and a shared understanding of the choices and trade-offs facing the country. A process that involves all key players not only provides the necessary diversity of thinking to create robust strategies but (and more importantly) creates alignment and collective agency to enable transformational action to be taken.



The inverted pyramid shows the shift from the 'cars first' paradigm to a 'people first' paradigm

Part II: How to design a transport strategy – a 5-phase process.

Part II presents guidance on how to design and facilitate the process for developing a national transport strategy, with ideas and tools for the 5 phases of the process:

Phase 1: Prepare

Gain commitment within the country government and development partners, build the project team, establish governance, agree the scope, and design the process.

Phase 2: Understand the past and present

Use systems thinking and human-centred design approaches, alongside more conventional information gathering to develop a deeper understanding of the

current transport sector, where it is and isn't working, and identify the key opportunities for change.

Phase 3: Explore the future

Explore plausible future scenarios, including global and national trends, and articulate a vision that describes a desired future.

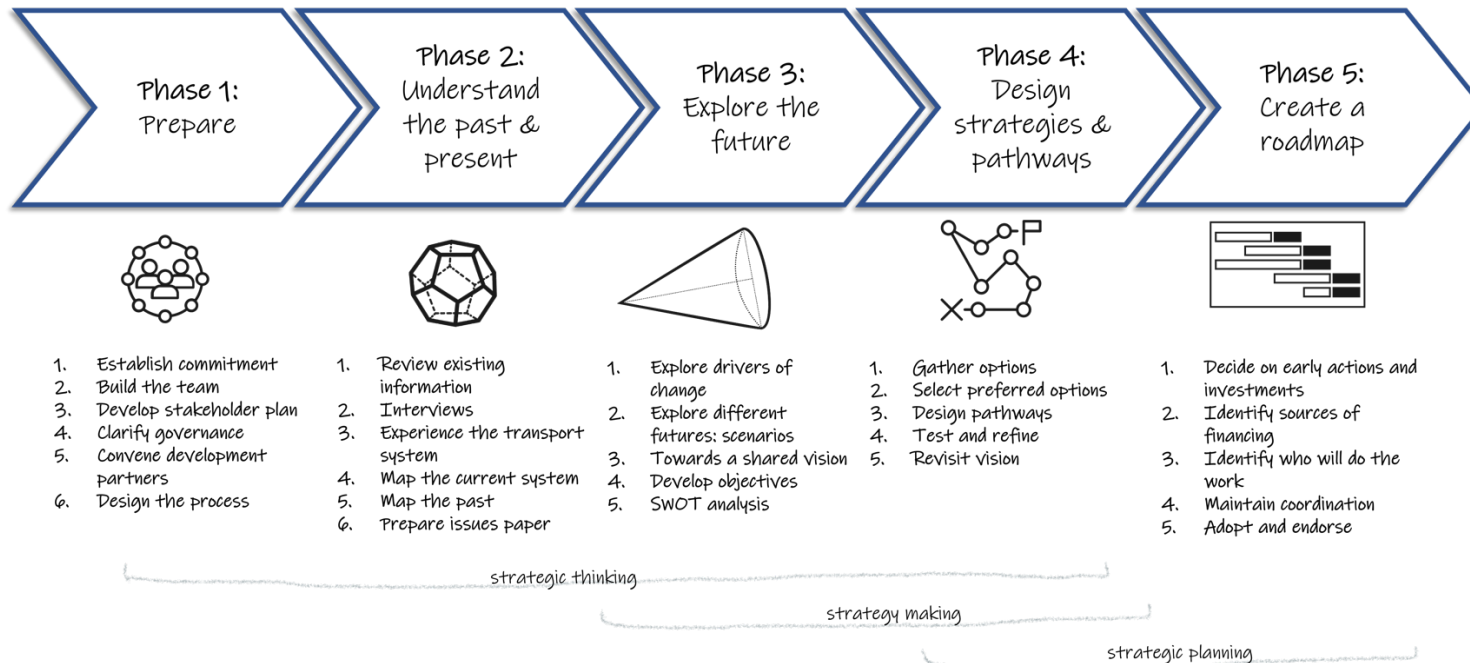
Phase 4: Design strategies and pathways

Select, evaluate, design and sequence strategies (including technologies, policies, and operational changes) into pathways.

Phase 5: Create a roadmap

Determine early actions and investments, sources of financing, the sequence of activities, the resources needed, and where responsibilities lie.

Each phase reinforces the importance of meaningful discussions between country decision-makers – including governments, the private sector, and development partners.



5 Phase process outlined in Part II of Navigating Island Futures in Transport

Part III: Menu of strategies and technologies

Part III provides a catalogue of strategies, technologies, policies, and other measures that have already been assessed for their suitability for small island countries. It means you won't have to start from scratch in your search for practical and appropriate solutions.

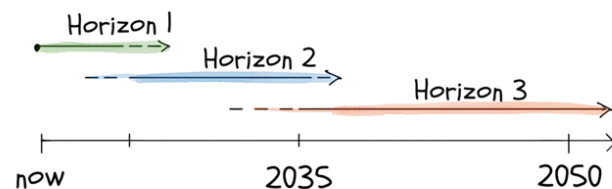
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While Parts II and III work together to provide practical, user-oriented guidance and tools on how to develop a long-term transport strategy, Part III may also be used to support the improved design of stand-alone transport-related projects.

Time Horizons

Part III considers how strategies and technologies might be applied over three time horizons out to 2050:

- Horizon 1: short-term – from now to around 5 years in the future.
- Horizon 2: medium-term – 5 to 15 years.
- Horizon 3: long-term – 15 to 30 years.



Island transport strategy and technology options

The guide recommends countries consider these following approaches when developing their national transport strategies

Urban and land transport systems



Integrated land use and transport system planning: Transport services and infrastructure needs are based on the location of communities, services, and economic opportunities, taking into account the long-term risks of climate change and natural disasters. Well-designed, more compact urban areas with better services reduce transport demand.



Designing streets for people first: Inclusive and safe urban streetscapes encourage walking and cycling and are accessible to all, creating connected and vibrant communities.



Cycling and micromobility (including electric-powered options): Shifting from private vehicle travel to micromobility reduces traffic congestion, fuel use and GHG emissions, and improve health. Small electric-powered mobility options are accessible and relatively affordable.



Small format EVs: Electric motorbikes (E2Ws) and motortrikes (E3Ws): Uptake of small-format electric 2- or 3-wheelers is encouraged through street design, preferential parking, and charging infrastructure. The introduction of these technologies is supported by quality standards, technician support, and battery life cycle management.



Public transport: Public transport supply is improved so that more people switch from cars to buses – which reduces GHG emissions even when buses are diesel. As a result, accessibility and economic inclusion are improved.



Reducing car dependency: When support is in place for walking, cycling, e-micromobility and public transport, it is desirable to discourage the use of private vehicles through various policy measures, which reduces problems of road congestion, abandoned vehicles, and GHG emissions.



Electrifying vehicles: To be effective at reducing GHG emissions, the adoption of electric vehicles requires accelerating the transition to renewable electricity generation. Electric vehicle uptake is supported by technician training, charging infrastructure, and full life cycle management of batteries.



Managing the lifecycle of vehicles and equipment: Regional-scale programs collect, export, and recycle vehicles, and repurpose or recycle batteries. The costs are factored into the adoption of electric vehicles.

Sea transport and aviation systems



Integrated planning for inter-island transport systems: An integrated approach to aviation and maritime transport fleet, infrastructure, and technologies considers the location of communities, services, economic opportunities, and the long-term risks of climate change and disasters. This is underpinned by a vision for what a good life looks like in remote and outer island communities.



Greening ports and ground operations (maritime and aviation): The infrastructure and operation of islands' ports can be more resilient and energy-efficient and reduce energy costs, GHG emissions, and environmental impacts.



Personal small boats for coastal travel: Locally-developed technologies for small boats are often the result of many generations of innovation and improvement. Their suitability for local construction and maintenance, and their minimal fuel use, suggests the 'old ways' should be encouraged, updated with modern construction methods and materials.



New-build and retrofits using low-emission vessel technology, including sailing ships: Custom design of ships can incorporate combined technologies including wind propulsion, hull design, solar/battery-electric propulsion systems, and low-carbon fuels to achieve significant reductions in fuel use and GHG emissions.



Improving operations to reduce fuel and emissions: Improved voyage planning, weather routing, optimised engine operation, hull cleaning, specialised coatings, and optimising ballast and trim improves the efficiency of existing vessels and reduces fuel use.



A regional approach to aviation services: Consolidating national airlines into regional or sub-regional could improve the viability of SIDS aviation (especially in the Pacific). The increased scale would enable economic and service improvements – including critical connectivity for remote communities – and provide better utilisation of, and flexibility within, the fleet.



Low-emission aviation technology: The international aviation industry is working hard to develop low-emission technologies – expected to emerge and become more affordable and available in the global market in the medium to long term. SIDS can 'watch this space' in aviation technology over the next decade or more.

Cross-cutting strategies



Connecting digitally: The increasing rollout of broadband internet to remote places is expected to continue, opening up the potential for providing digital access to services such as education and healthcare, and avoiding the need to travel.



Managing the life cycle of infrastructure: The location, design, and construction of roads and infrastructure increases resilience while having regard to the local capacity and materials for maintenance and rehabilitation. Governments are fully aware of the ongoing costs of maintaining and repairing infrastructure and earmark the necessary funding in their budgets or ensure it is otherwise provided for by a donor-sponsored trust fund or similar.

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For enquiries about this guide please contact Nicole Baker nicole@hope-road.com.au

