

KEY POINTS

- Countries in Asia and the Pacific and regional groupings are increasingly aiming for sustainable tourism characterized by long-term growth, resilience, sustainability, and inclusiveness, in line with the Sustainable Development Goals.
- Sustainable tourism requires multisector (whole-of-government) and multilevel (vertical coordination) policy, governance, and implementation actions supported by adequate and timely data to measure and monitor progress.
- No one-size-fits-all approach exists, but good practices and principles, such as having strong and appropriate governance and monitoring structures and frameworks, will contribute to sustainability.
- Digitalization contributes to the sector's sustainability and resilience, but adopting the digital agenda in tourism uniformly across activities and countries presents challenges.
- Regional and international organizations have important roles in providing financial and technical support in addressing issues in sustainable tourism that have transboundary, regional, and global implications.

Regional Cooperation and Integration to Promote Sustainability and the Digital Transformation of Tourism

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INTRODUCTION

Post-coronavirus disease (COVID-19) pandemic, the pathway for the tourism sector to build forward better is to embrace sustainability and digital transformation. The pandemic, and its lockdowns, revealed sector vulnerabilities as businesses shut and people lost jobs. It exposed gaps in regional cooperation among countries as borders closed and international tourist arrivals plummeted, slashing visitor spending and tourism export earnings. As economic recovery began in 2022, however, many stakeholders agreed in the need to build forward better. By this, they mean to rethink tourism development with policies and strategies that can trigger investment and change behavior in ways that can reduce future shocks and increase business and societal resilience when these shocks do happen. Many stakeholders call for pursuing

Notes:

1. In this publication, ADB recognizes “Korea” as the Republic of Korea.
2. The brief has benefited from the presentation and discussion materials during the Workshop on Regional Cooperation to Promote Sustainable Tourism held at the Asian Development Bank (ADB) headquarters on 6–7 November 2023. The authors would like to thank participants of the workshop, including experts from international organizations (Asia-Pacific Economic Cooperation, Association of Southeast Asian Nations, Economic and Social Commission for Asia and the Pacific, Organisation for Economic Co-operation and Development, the Pacific Tourism Organisation, and the United Nations World Tourism Organization [UN Tourism]); representatives from the private sector such as the Pacific Asia Travel Association, Clickable Impact Consulting Unit, Deloitte, and Korea Telecom; and the academia. The authors sincerely thank Steven Schipani and Wouter Schalken from ADB's Sector Group, and Sandra Carvao of UN Tourism for supporting the workshop and providing feedback on an earlier version of this brief.

sustainability while embracing digital transformation as a pathway to achieve long-term growth and resilience and make the tourism sector more inclusive. Likewise, they see a need for better and stronger governance and monitoring frameworks at the destination or local and national levels to transform the tourism sector (UN Tourism and UNEP 2005; UN Tourism 2013).¹

Transforming economies through sustainable tourism. Tourism is instrumental in the transformation of many economies, especially in Asia and the Pacific. Given the sector’s economy-wide impact through a wide range of other sectors, including transport, banking and insurance, entertainment, construction, and food and beverages, transforming tourism can be instrumental in the adoption of innovative policies and technologies in related sectors. A more sustainable tourism sector can help countries attain their Sustainable Development Goals (SDGs) by contributing to almost all of them. These include decent working conditions that support economic growth, preserving life below water, promoting responsible consumption and production patterns, enabling empowerment of women, advancing climate action, and creating opportunities to fight economic and social inequalities. Technology can also help promote sustainable tourism by stepping up digitalization across all value chain activities (travel booking, transportation, accommodation, tourism assets, food and beverages, tours, and others).

Drawing on the post-pandemic literature, particularly a few recent studies and the Asian Development Bank (ADB) workshops, this brief presents findings and recommendations and identifies strategic regional interventions to promote sustainability and digital transformation of the tourism sector. The brief provides insights to policymakers, particularly developing economies in Asia and the Pacific, as they design, refine, or strengthen their tourism development policies for long-term growth, resilience, sustainability, and inclusivity—nationally and regionally.

SUSTAINABLE TOURISM: ENABLERS AND INSTITUTIONS

Evolution of “sustainable tourism.” The concept of sustainable tourism is not new, but it has evolved. It was initially used in the context of the natural environment and ecotourism, encompassing three dimensions or pillars of sustainable development: economic, environmental, and sociocultural. It is tourism that (i) maintains long-term viability of economic activities that can provide equitable benefits to all stakeholders, (ii) manages the use of environmental resources and helps conserve natural resources and biodiversity, and (iii) respects the living cultural heritage and traditional values of host communities and facilitates intercultural understanding (UN Tourism and UNEP 2005).

ADB’s sustainable tourism framework. The ADB report, *Sustainable Tourism After COVID-19: Insights and Recommendations for Asia and the Pacific*, captures the key dimensions of tourism (i.e., visitors, industry, community and culture, and environment) and identifies factors that can help achieve the SDGs through tourism and ensure tourism activities remain within global and local carrying capacities (Figure 1). The report lists five thematic areas proven to support tourism’s contribution to the SDGs: (i) governance, including deeper public sector involvement; (ii) policy, especially those encouraging stewardship and collaboration; (iii) investment in hard infrastructure (roads and airports) and digital infrastructure; (iv) research and data; and (v) education and training (ADB 2021).

Enablers of sustainable tourism. The development of sustainable tourism from the perspective of public sector intervention requires enablers. The key enablers are (i) policy; (ii) strategy; (iii) development plans; (iv) laws, regulations, and licensing or standards; and (v) governance structures (Figure 2). Further, sustainable tourism requires an enabling environment for all stakeholders including the enterprises, tourist destinations, and other entities operating to provide a smooth tourism experience. It should be noted that there is no one-size-fits-all approach as the market status, and geographical, cultural, and technological contexts influence enablers and outcomes. In general, a more sustainable trajectory requires intervention across all tourism stakeholders and all levels of public sector intervention, including those that impact on the visitor, industry, community, and environment dimensions, as well as collaboration across the public and private sectors, development partners, communities, and destinations (ADB 2021).

Policy recommendations to building sustainable tourism. According to ADB (2021) discusses six pathways to shift tourism toward more sustainable development in Asia and the Pacific: (i) supporting value-driven tourism; (ii) decarbonizing tourism; (iii) promoting tourism-led regeneration; (iv) strengthening diversification of markets, products, and skills, as well as economic diversification; (v) improving tourism governance; and (vi) aligning tourism finance with sustainability. It identifies the lack of good governance structures to support long-term planning, collaboration, and management as a pressing barrier to sustainable tourism in the region.

To guide the tourism sector’s post-pandemic, long-term development and resilience, UN Tourism (2020) recommended seven key policies:

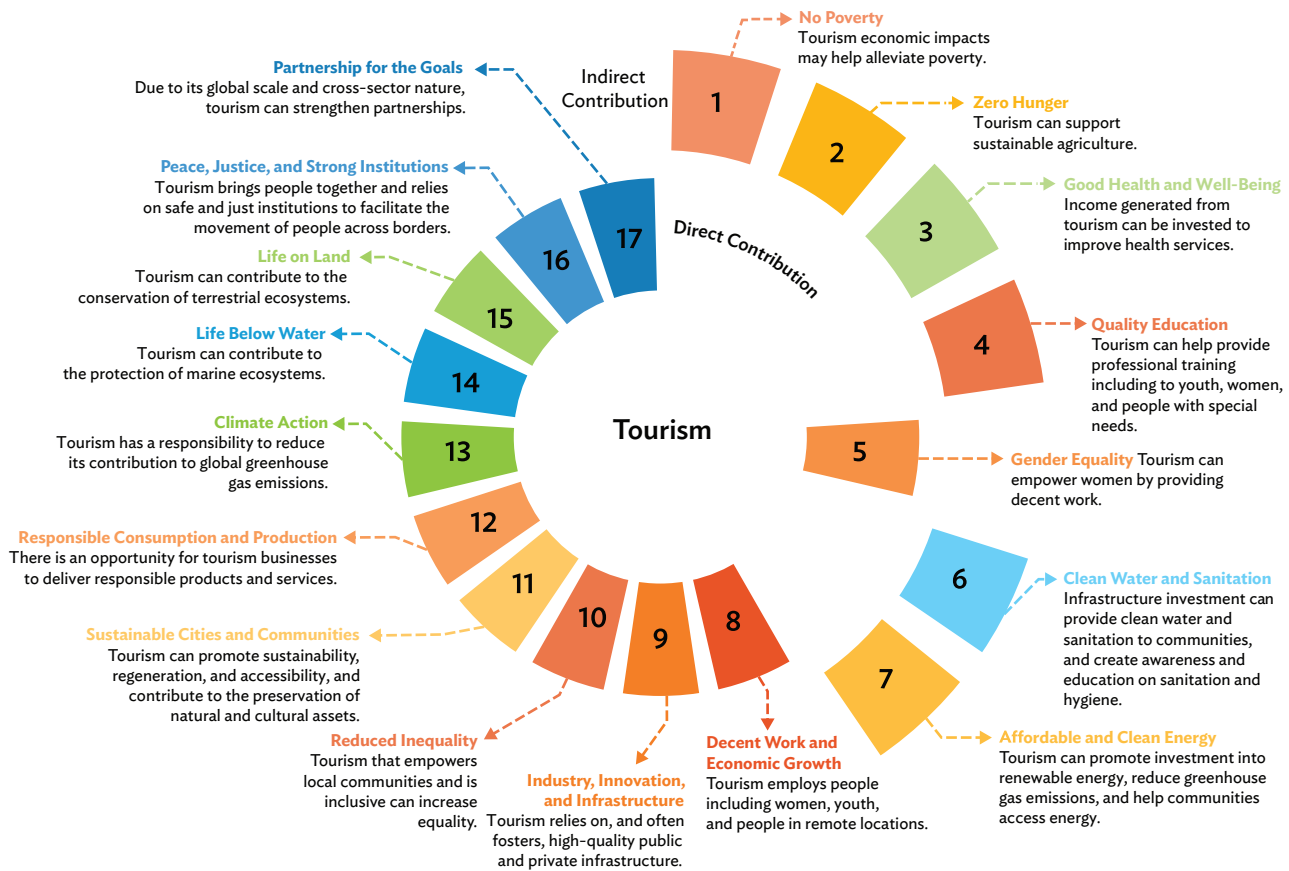
- (i) diversify markets, products, and services;
- (ii) invest in market intelligence systems and digital transformation;
- (iii) reinforce tourism governance at all levels;
- (iv) prepare for crisis, build resilience, and ensure tourism is part of national emergency mechanisms and systems;
- (v) invest in human capital and talent development;
- (vi) place sustainable tourism firmly on the national agenda; and
- (vii) transition to a circular economy and embrace the SDGs.²

¹ The United Nations World Tourism Organization changed its name in 2023 to UN Tourism.

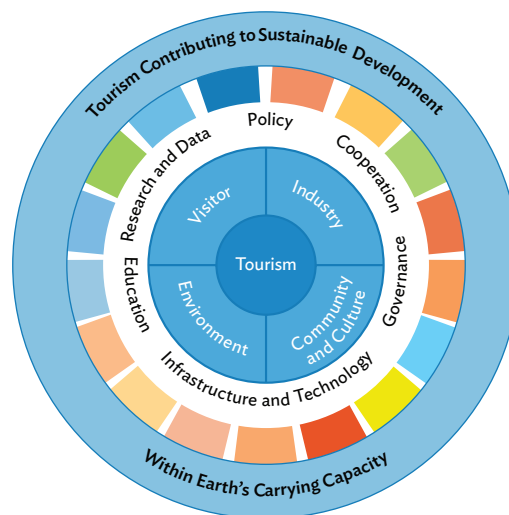
² A circular economy aims to minimize waste and promote a sustainable use of natural resources through smarter product design, longer use, recycling, and more, as well as regenerate nature (UNDP 2023).

Figure 1: How Tourism Can Support the Sustainable Development Goals and the Sustainable Tourism Framework

(a) Tourism and SDGs



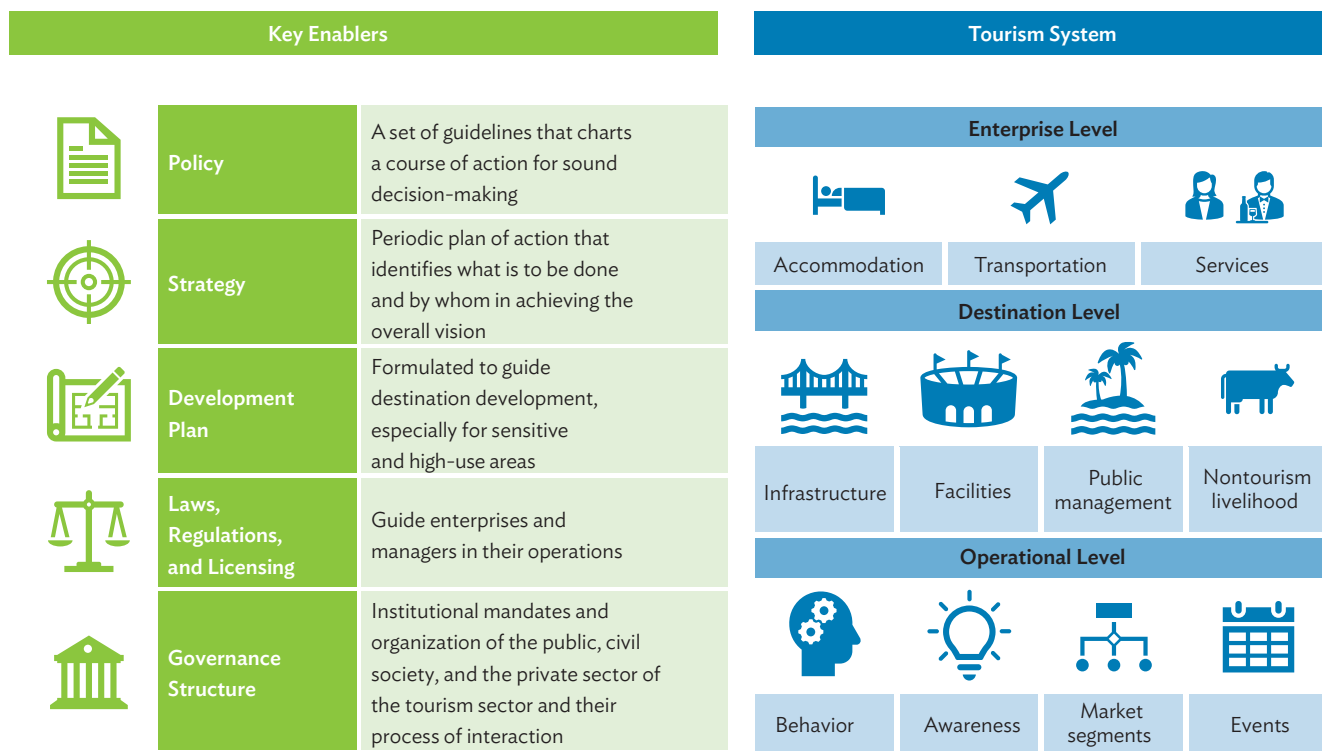
(b) Sustainable Tourism Framework



SDG = Sustainable Development Goal.

Source: Asian Development Bank. 2021. *Sustainable Tourism After COVID-19: Insights and Recommendations for Asia and the Pacific*. Figures 1 and 2. pp. 2–3.

Figure 2: Key Enablers of a Sustainable Tourism System



Source: Authors as adapted from W. Schalken. 2023. *Creating an Environment for Sustainable Tourism*. Presentation prepared for the Asian Development Bank Workshop on Regional Cooperation and Integration to Promote Sustainability and Digital Transformation of Tourism. 6 November.

UN Tourism’s frameworks over the years highlighted the need to adapt policies, approaches, and tools to prevailing national conditions, needs, and capacities, instead of proposing a one-size-fits-all solution.

Strengthening stakeholder participation and institutional structures. A more crucial message to building forward better and, hence, developing a sustainable tourism sector is to involve all relevant stakeholders and improve governance structures. This implies considering and balancing different positions and motivations of the public and private sectors. That, in turn, requires appropriate governance or institutional structures to help governments work harmoniously internally (i.e., whole-of-government approach) and with the private sector and other stakeholders. In particular, the crosscutting nature of the pillars and goals of sustainable tourism indicates the need for a multilevel and multisector approach across national, regional, and local or destination structures for effective cooperation, coordination, and partnerships at the country level (UN Tourism 2004, 2013, 2018, 2020). The next section discusses governance structure at length.

GOVERNANCE STRUCTURE FOR SUSTAINABLE TOURISM

Institutional aspects of sustainable development. Institutions and governance are integral to developing sustainable tourism. While emphasizing the role of a core set of indicators to monitor implementation progress, the UN Commission for Sustainable Development, in its initial framework, included the institutional dimension of sustainable development as a key pillar (UN 1996). The main institutional aspects of sustainable development included integrating environment and development in decision-making, establishing international legal instruments and mechanisms, and strengthening the role of major groups. UN Tourism (2004, 2013) likewise identified the need for appropriate institutional structures to help governments work in harmony both internally and with the private sector and other stakeholders to pursue sustainable tourism. Post-COVID-19, improving, strengthening, or developing new tourism governance frameworks was typically identified as a principal recommendation. Stronger emphasis needs to be put on the management of health, safety, and security issues that impact the sustainability of tourism, which requires the inclusion of tourism representatives in crisis management teams to coordinate responses to address any similar adversity in the future.

Multisector and multilevel governance and coordination.

The development of sustainable tourism requires governance and coordination across multiple levels and many stakeholders. Because tourism impacts many economic and social sectors and various government areas are responsible for policies and actions that impact sustainable tourism development, a multisector (whole-of-government) and multilevel (vertical coordination) approach is needed (Table 1). Coordination and cooperation between national, subnational or regional, and local or destination structures are also essential to ensure complementary policies and actions at these different levels. These call for formal structures and processes for interministerial, intergovernment, or inter-agency coordination and cooperation on sustainable tourism (UN Tourism and UNEP 2005), as well as mechanisms for the coordination of the various levels of government (national, regional, and local).

A structure for government to engage the private sector and other stakeholders is vital in the formulation of relevant strategies, policies, and actions for sustainable tourism, as well as for effective coordination of actions (Table 2). According to UN Tourism and UNEP (2005), an ideal structure would be a permanent forum or standing conference for stakeholders representing different interests, and a smaller body or council to deal with more focused and detailed work.

Role of digital transformation. The COVID-19 pandemic highlighted the role of digitalization in building sustainability and resilience in the tourism sector. It underscored the need for sustainable tourism and accelerated the digital agenda in tourism—that is, transforming tourism through digital technologies to enhance effectiveness, efficiency, and resilience. The literature stresses the crucial role digital transformation can play in the recovery of the sector, and more importantly in building better tourism. For instance, typical policy responses across countries included digital health passports, digital tracking of vaccination or COVID-19 test results, and COVID-19 tracing apps for mobile phones (ADB and UN Tourism 2021). Tourism businesses also moved toward digital marketing and contactless and seamless transactions by leveraging technology, as consumers shifted to digital channels. Investment in the needed digital infrastructure and digital skills and implementing the regulatory and legal frameworks are critical for sustainable and inclusive tourism development (WTTC 2021).

Improved data collection. Greater digitalization enables better data collection that further helps in developing policies and sustainable outcomes. Investing in better measuring techniques for tourism sustainability is important for tourism policy development and governance—and this is where digital tools and processes can

Table 1: Areas of Government with Impact on Tourism Sustainability

Area of Government ^a	Policy and Action
Prime Minister's Office	Tourism's position within the overall national policies and priorities; coordination across various government areas
Tourism	Overall development, coordination, and implementation of tourism policy; support of tourism development, management, measurement, and marketing
Finance	Level of budgetary resources allocated to tourism; tax policies
Trade	Terms of trade negotiations; export and investment promotion; trade in services
Economic Development	Sustainable development policies; support for enterprises, namely, small and medium-sized enterprises; investment policies
Environment and Natural Resources	Regulation and control of environmental impact; conservation of biodiversity; management of protected areas; management of resources for ecotourism; international negotiations and agreements
Transport	Connectivity, traffic management, and sustainable transport issues; air transport taxation and costs; infrastructure development
Culture	Management and preservation of historic sites and cultural heritage; promotion and preservation of tangible and intangible heritage; promotion of creative industries
Agriculture	Rural development and supply chain issues; food systems; exports and imports of food
Education	Tourism training and education
Health	Safety and social security issues for visitors and employees
Sport and Recreation	Promotion of attractions, activities, events, etc.; elements of domestic market
Internal Affairs	Crime and security; child protection
Foreign Affairs	Source country–destination relationships; visa requirements

^a Depending on the countries, the area of mandate of each ministry can vary.

Note: Other government areas not covered in the list include information and communications technology, public works and infrastructure, social welfare and poverty alleviation, and labor and employment.

Source: UN Tourism and United Nations Environment Programme. 2005. *Making Tourism More Sustainable: A Guide for Policymakers*. Table 3.1. p. 51.

Table 2: Stakeholders and Roles in Sustainable Tourism

Stakeholder Type	Role in Delivering Sustainable Tourism
International development assistance agencies <ul style="list-style-type: none"> Multilateral agencies and programs Bilateral agencies 	<ul style="list-style-type: none"> Integrating tourism in development policies and agreements Financial and technical assistance to sustainable tourism and individual programs and projects
National government <ul style="list-style-type: none"> Tourism ministry Other ministries Tourism agencies (e.g., tourist board) Other government delivery agencies Resource management bodies (e.g., National Parks Service) 	<ul style="list-style-type: none"> Tourism policy and strategy development and implementation Relating tourism to wider policies and strategies Legislation, standards, and regulations relating to the sector Infrastructure planning and development Resource management Communication, information, and marketing
Local government and destination bodies <ul style="list-style-type: none"> Regional government Local authorities (e.g., district councils) Destination management organizations (e.g., public-private) 	<ul style="list-style-type: none"> Local strategic direction and planning Implementation of policy and regulations Local infrastructure development and management Stakeholder engagement, coordination, and support
Private sector businesses <ul style="list-style-type: none"> Tourism trade associations, national and local Tourism service providers (e.g., hotel businesses) Tour operators, international and domestic Suppliers to the sector (e.g., food producers) Investors, international and domestic 	<ul style="list-style-type: none"> Representation of, and influence on, the tourism sector Operation of tourism services Link to domestic and international markets Product development, investment, and improvement Employment creation and generating local income Reflecting economic, social, and environmental sustainability issues in development and operations
Employees and related bodies <ul style="list-style-type: none"> Labor unions Individual workers in the sector 	<ul style="list-style-type: none"> Representing interests of employees Human resources planning and development Provision of a reliable service in return for income
NGOs (international, national, and local) <ul style="list-style-type: none"> Sustainable development NGOs Environment, conservation, and cultural NGOs Social and community NGOs 	<ul style="list-style-type: none"> Representing different stakeholder interests Engaging in strategic planning and development Stakeholder coordination and supporting implementation Capacity building and provision of expertise
Education and training bodies <ul style="list-style-type: none"> Universities, colleges, and teaching bodies Research institutions Technical experts and advisory bodies 	<ul style="list-style-type: none"> Knowledge gathering and dissemination Supporting policy and strategy development Capacity building and training Specific advice and expertise
Local community <ul style="list-style-type: none"> Community councils and representative bodies Traditional structures (e.g., tribal chiefs/bodies) Organized groups (e.g., women, youth) Local formal and informal traders Individual households 	<ul style="list-style-type: none"> Engaging in planning and decisions on tourism at a local level Representing and communicating local community interests Pursuing equitable benefit-sharing within communities Interacting with tourists to mutual benefit Receiving income from tourist spending
Consumers/tourists <ul style="list-style-type: none"> Individual tourists Consumer networks, clubs, and societies Travel media and social media users 	<ul style="list-style-type: none"> Providing the main source of income to the sector Behaving responsibly toward the environment and local communities in travel choice and actions Communicating information and opinions on destinations and sustainability issues accurately and fairly

NGO = nongovernment organization.

Source: UN Tourism. 2013. *Sustainable Tourism for Development Guidebook – Enhancing Capacities for Sustainable Tourism for Development in Developing Countries*.

Table 1.1, pp. 17–18.

help. The recently approved Statistical Framework for Measuring the Sustainability of Tourism (SF-MST) is an internationally agreed reference framework for measuring the economic, social, and environmental aspects of tourism. Also, big data is increasingly being used as a valuable tool for monitoring visitor traffic and supporting better planning and management of tourism flows (and for crowd management in the pandemic).³ Big data in tourism studies, especially to understand spatial-temporal behavior of tourists and visitors, has also increased. More generally, reliable, granular, and timely data to measure and monitor sustainable tourism (like carrying capacity) are needed for evidence-based tourism policymaking and planning.

DIGITAL TRANSFORMATION IN TOURISM

New digital technologies and platforms. The tourism sector was among the early adopters of new digital technologies and platforms to deliver services and develop new products. In particular, the rapid evolution of information and communication technology (ICT) has enabled a wide range of new opportunities in tourism. Among them are the development of digital platforms (e.g., electronic flight ticketing and online booking of accommodation, and other services), mobile technology,

smartphones, user-generated content, reviews and feedback, integration with social media, the incorporation of Global Positioning Services (GPS), and use of big data and artificial intelligence. These have resulted in multifarious benefits for tourism stakeholders, particularly tourists or visitors, businesses, and policymakers (ADB 2023).

Digitalization and smart tourism. Digital technology was also crucial in addressing pandemic impacts. Digitalization supported seamless travel technologies such as digital travel certificates, which were issued by most countries during COVID-19. Technology can remain a vital enabler of safe and seamless travel post-pandemic. Thus, governments need to invest in the digital infrastructure, especially of emerging destinations and remote areas, and enhance digital skills within local communities (WTTC 2021).

Countries can capitalize on several other new technological solutions for sustainable tourism development. The digitalization in tourism across the tourism value chain is multidimensional and ranges from basic digitization of tourism operations and services (i.e., e-tourism), to intermediate digitalization (i.e., Tourism 4.0), and finally to more advanced digitalization (i.e., smart tourism) (Tables 3 and 4) (ADB 2023).






Table 3: Digital Transformation in Tourism

(a) Stages of Digital Transformation		(b) Evolution of Digitalization in Tourism			
Stage	Characteristics	Dimension	E-Tourism	Tourism 4.0	Smart Tourism
Basic	Telecom and infrastructure Internet usage Computer usage Web presence Offline sales	Sphere	Digital	Digital and physical	Bridging digital and physical
		Core technologies	Websites	Smartphones	Sensors and smartphones
Intermediate	Digital literacy and skills Privacy and cybersecurity regulations Use of e-payments E-commerce participation Some level of data analytics used Majorly offline sales	Paradigm	Interactivity	Technology-enabled infrastructure	Technology-mediated co-creation
		Sustainability vision	No	No	Yes
Advanced	Creation and innovation Regional cooperation Use of artificial intelligence Use of software as a service/ cloud-based service High usage of data analytics Majority of sales conducted online	Structure	Value chain activities	Value chain linkages	Ecosystem
		Efficiency orientation	Low	High	High
		Effectiveness orientation	Low	Low	High

Source: Asian Development Bank. 2023. *Promoting Smart Tourism in Asia and the Pacific Through Digital Cooperation*. Table 2 (p. 14) and Figure 8 (p. 11).

³ “Big data” refers to the large, diverse, structured, and unstructured datasets of information that organizations, people, and machines (sensors) constantly generate and transmit at ever-increasing rates (Ghotkar and Rokde 2016; ADB 2021). They are datasets whose size is beyond the ability of typical database software tools to capture, store, manage, and analyze. “Big data analytics” refers to the process of collecting, organizing, and analyzing big data to discover trends and patterns in large amounts of raw data to help make data-informed decisions (ADB 2022).

Table 4: Application of Smart Tools Across the Tourism Value Chain

Smart Tools	Smart Travel Facilitation		Smart Tourist Destination			
	Travel organization and booking	Transportation	Accommodation	Food, beverages, and other shops	Tourism assets	Leisure, excursions, and tours
 Smart Identity	Automated check-in, smart visas, health certificates	Tourist passes, facial verification	Automated check-in and check-out	Thermal screening	Thermal screening, tourist passes	Thermal screening, tourist passes
 Smart Platforms	Aggregators, marketing, chatbots, payment system	Sharing economy, aggregators, payment system	Sharing economy, aggregators, payment system	Online ordering, reservations, reviews and ratings, payment system	Information dissemination, ticket booking, payment system	Information dissemination, ticket booking, payment system
 Smart Logistics	Smart baggage management	Integrated traffic management, autonomous vehicles	Smart baggage management	Food delivery systems	Crowd management	Crowd management
 Smart Experience	Virtual tours	Interactive menus	Virtual tours, metaverse	Virtual tours, metaverse
 Smart Devices	...	Baggage tracking, fleet management	Smart rooms	Inventory management	Smart sensors for tracking	Personalized experience

... = not applicable.

Note: This table is illustrative and nonexhaustive.

Source: Asian Development Bank. 2023. *Promoting Smart Tourism in Asia and the Pacific Through Digital Cooperation*. Figure 15. p. 25.

Smart tourism, in turn, consists of two major elements: (i) smart travel, which involves smart tools (i.e., applications of digital technology) in services and activities to get the tourist from origin to destination; and (ii) smart destination, which refers to smart tools to facilitate access to tourism and hospitality products, services, spaces, and experiences. Not only can smart tools enhance the travel experience, but they can also boost traveler numbers and encourage more responsible and sustainable practices among tourists and the tourism industry through green destinations, energy-efficient transport, sustainable certification and badges, and carbon footprint calculators for tourists (ADB 2023).

Challenges in digital transformation. Challenges remain in the adoption of the digital agenda in tourism uniformly across activities and countries. The level of digital maturity or readiness affects the extent of digital transformation of the sector. This is related to a country’s technological readiness (i.e., availability, accessibility, and affordability of digital technology and digital skills) and the enabling environment (overall competitiveness of tourism; legal, financial, social, and geographic aspects of digital inclusiveness). Countries face many challenges, including (i) insufficient finance and limited skills; (ii) digital divide between countries and nationally, with urban centers and established destinations typically more digitally ready than remote and rural locations; and (iii) an absence of standard

operating procedures, practices, compatible digital technologies, and data privacy and security (Weltman et al. 2024).

Collaborations and partnerships across tourism stakeholders, and financial and technical support from multilateral organizations for investment in digital infrastructure as well as skills are critical to the digitalization and digital transformation of the tourism sector. In particular, collaborative approaches to deal with the big challenges would allow sharing and adoption of best practices, more efficient pooling and use of resources, and capitalizing on economies of scale.

MEASURING TOURISM SUSTAINABILITY

Adequate and timely measurement of tourism sustainability forms part of smart solutions and promotes evidence-based planning and policymaking for responsible management of tourism and its impacts (UN Tourism 2018). Shortcomings in tourism data became apparent during COVID-19, which convinced countries to explore new data sources. Indeed, both developed and developing countries need to modernize and strengthen their tourism data systems, although more so for developing economies, which face financial and technical resource capacity challenges.

Data availability issue. Availability of relevant data remains a major challenge for many developing economies, including in Asia and the Pacific. Even more so, data is lacking for measuring and monitoring the social and environmental dimensions of tourism sustainability and the potential economic benefits from environmental and sociocultural sustainability. UN Tourism, in its early work on sustainable tourism development in the 1990s, promoted indicators as an essential planning and management tool for tourism planners by (i) providing information on issues and areas of concern (impacts, product quality, threats, etc.); (ii) helping to evaluate performance of the tourism plan; and (iii) providing evidence to assess the planning and policy framework (UN Tourism 2004).

Building on its 2004 Guidebook on the use of indicators, UN Tourism's most recent and comprehensive initiative is the Statistical Framework for Measuring the Sustainability of Tourism (SF-MST). The SF-MST takes into consideration the economic, environmental, and social dimensions at different geographic levels (i.e., global, national, and subnational or local) and integrates two existing accounting frameworks (UN Tourism 2024a). First, the Tourism Satellite Account: Recommended Methodological Framework 2008 provides a system for measuring tourism's role in the economy. Second, the System of Environmental-Economic Accounting Central Framework 2012 provides an international statistical standard for the measurement of the environment and its relationship to the economy. In addition, the SF-MST also combines statistical standards and guidelines developed by the International Labour Organization to cover data on the characteristics of the labor force. The focus of SF-MST is to provide integrated and comprehensive data that would enable stakeholders to assess the sustainability of their tourism sector.

Need for more granular and high-frequency data. Another important challenge is measuring and monitoring tourism sustainability in all its three pillars (economic, environmental, and sociocultural) and having timely indicators in mapping out the most up-to-date state, changes, and challenges of destinations. Aggregate or country-level data, such as the Tourism Satellite Account, are typically released with a lag, which can render them outdated especially if current conditions change drastically. Important differences at the subnational or local destination levels are also not likely captured by country-level data. Hence, there is a need for more granular and high-frequency data, which in turn highlighted potential opportunities to utilize big data that come from tourism activities. These data will be used to track and manage the social, economic, and environmental impacts of tourism activities, and help policymakers make more informed decisions to manage tourism flows and maximize economic and social benefits while promoting sustainability and resilience (ADB and UN Tourism 2021; ADB 2022). For instance, UN Tourism also developed the online platform, UN Tourism Data

Dashboard,⁴ to take advantage of the big data they built during the crisis by creating a one-stop-shop with different data sources, as well as to share data by countries on a monthly basis. Further improvement of data sources includes integrating big data with official statistics for more up-to-date information, exploring big data for better monitoring and management of flows and trends, and committing to the implementation of the SF-MST.

Other challenges. Unlocking the potential of more granular and high-frequency data raises further new challenges. These include (i) data-related issues, especially access to data owned by private companies, alignment of concepts and definitions, selectivity bias, and quality and comparability over time; (ii) human capital for big data; (iii) access to relevant technologies; (iv) a data-driven culture; and (v) ICT infrastructure and a governance framework. Governments need the strategic and technical groundwork to harness the opportunities of big data and mitigate its risks, including protection of data privacy, fraud, and cybersecurity. This requires (i) prioritizing investments in big data systems to address shortcomings in infrastructure and skills, (ii) partnerships with private and public big data providers, (iii) well-established measurement systems based on international standards for sustainable tourism planning and management, and (iv) regional cooperation on tourism-related policies (ADB and UN Tourism 2021).

REGIONAL COOPERATION AND INTERNATIONAL COLLABORATION: WAYS FORWARD

A multistakeholder and highly fragmented sector. Tourism is a sector made up of various industries and, hence, is highly fragmented. Furthermore, the tourism ecosystem constitutes a range of individuals, businesses, communities, government agencies, organizations, and other stakeholders that interact at various levels and stages in delivering a complete tourism experience. Thus, integrating sustainability into the whole tourism agenda is complex, particularly for developing economies. The challenge is to come up with pragmatic and adaptable approaches to ensure that policy statements advance toward practice or actions. These entail the following:

- (i) developing comprehensive local and national strategies that consider the complementarities between them to come up with tourism policies that espouse sustainability and to ensure that tourism sustainability is adequately captured in all other agenda of relevant agencies;
- (ii) implementing an appropriate tourism governance structure that involves the wide range of stakeholders, including local communities, to ensure coordination, cooperation, and participation in drafting strategies to foster buy-in and commitment to implementation;

⁴ The UN Tourism Data Dashboard (<https://www.unwto.org/tourism-data/un-tourism-tourism-dashboard>) provides statistics and insights on key indicators for inbound and outbound tourism at the global, regional, and national levels. Data cover tourist arrivals, tourism share of exports and contribution to GDP, source markets, seasonality and accommodation (data on number of rooms, guest, and nights).

- (iii) capitalizing ICT for greater efficiency; and
- (iv) developing capacity to adequately and appropriately measure and monitor progress toward sustainable tourism in all its three pillars.

Areas for regional cooperation. While sustainability and digital transformation are primarily a national agenda, important areas for regional cooperation exist in Asia and the Pacific to promote international tourism. For instance, the Asia–Pacific Economic Cooperation (APEC), the Association of Southeast Asian Nations (ASEAN), and the Pacific Tourism Organisation (SPTO) all pursue a regional agenda in sustainability and digital transformation in tourism to varying degrees. A regional agenda can complement, supplement, and even reinforce national agendas, and can promote standardization and harmonization to facilitate travel across countries. Also, dealing with the big challenges collaboratively allows sharing and adoption of best practices, more efficient pooling and use of resources, and capitalizing on economies of scale in institution-building. Multilateral organizations and bilateral agencies are also critical in developing and supporting national and regional initiatives. Regional interventions include the following:

Strengthening Tourism Governance

The lack of good governance structures to support long-term planning, collaboration, and management prevents the achievement of sustainable tourism in Asia and the Pacific (ADB 2021). A review of the 10 ASEAN members indicates that while sustainable tourism development frameworks covering the three dimensions or pillars of sustainability (economic, environmental, and sociocultural) began to develop more fully in the last 5–6 years, especially among ASEAN’s developing members, the lack of mechanisms and structures for multisector cooperation, coordination, and collaboration remained a key challenge (ERIA 2022).

Building such structures at the country level would take time and resources, which could be challenging for developing countries. Specific country, regional, and/or local needs and contexts should be considered in the design of such structures to ensure scarce resources are not spent on building overly complex or ambitious structures. Where national coordination structures for monitoring countries’ progress on the SDGs exist, the tourism sector can capitalize on such structures and ensure tourism is included in the voluntary national reviews of the SDGs.

Regional and international organizations can play an important role in providing financial, technical, and institutional support in this area. In particular, the recommended multisector governance structure has a regional application, which could help countries pool resources; share knowledge, experiences, and best practices; and develop regional frameworks and common standards. For instance, APEC holds the annual APEC Tourism Ministerial Meetings and has a Tourism Working Group that handles its agenda on sustainable tourism. In ASEAN, tourism has been an important area for regional cooperation since its establishment. The ASEAN Tourism Ministers leads an expanded

governance structure that meets annually and provides policy framework and direction, supported by the ASEAN National Tourism Organisation, which oversees the development and implementation of strategic action plans and other initiatives. Moreover, the ASEAN Secretariat provides overall coordination and support.

Both APEC and ASEAN have prioritized sustainable tourism in their strategic plans, although they have not yet undertaken an integrated multisector approach to sustainable tourism. Recently, the *ASEAN Framework for Sustainable Tourism Development* was adopted in 2022 to address the need for a multisector approach in the region. Work is ongoing to develop the road map for its implementation, which would guide the different stakeholders and define their areas and responsibilities.

The SPTO is a good example of an existing governance structure to support sustainable tourism regionally. It spearheaded the *Pacific 2030 Sustainable Tourism Policy Framework* (SPTO 2021) in the aftermath of the COVID-19 pandemic and launched it in late 2021, in close collaboration with regional agencies. These included national governments, industry and community organizations from the 20 member countries, and development partners such as the United Nations Development Programme and New Zealand. The Pacific framework highlighted the importance of all stakeholders (within and outside government) working together to make tourism more sustainable across the region. It outlined the roles of all relevant stakeholders in its successful implementation. Also, the framework did not advocate a one-size-fits-all solution but recognized that Pacific destinations are at different stages of development and maturity. Finally, the Pacific framework acknowledged the need to mobilize significant financial and technical resources, at both national and regional levels as well as from development partners, for its successful implementation (see the box for more details).

Regionalism has been a key feature in the Pacific, which strengthened the ability of the nation states to negotiate on critical global issues (ADB 2021). In particular, the SPTO maintained its custodian role for the Pacific tourism industry in response to the pandemic. The SPTO also facilitated engagement with donor countries and regional and international organizations for financial and technical support both at the national and regional levels. For instance, it is collaborating to enable sustainable tourism with the Pacific Private Sector Development Initiative, an ADB technical assistance program with support from the Australian and New Zealand governments that covers ADB’s 14 Pacific member countries (also members of SPTO, except Palau).

How a dedicated, permanent structure, such as the SPTO, can champion and continuously support sustainable tourism at the regional level is an important lesson to consider for other regions. The Pacific experience highlights the need for visionary leadership and a holistic and forward-thinking approach with government, industry, stakeholder, community, and development partner support. A coordinated approach is deemed vital to their success, including strengthening existing partnerships and building new ones. More generally, the role of champions in

Tourism Sustainability and Digital Transformation in the Pacific

The Pacific region presents a good case study on how to integrate sustainability and digital transformation into the whole tourism agenda, nationally and regionally.

The Pacific Tourism Organisation (known as the SPTO, after its former name, the South Pacific Tourism Organisation) was established in 1983 to oversee tourism for its 21 government and private sector members. The SPTO spearheaded and coordinated the development of the *Pacific 2030 Sustainable Tourism Policy Framework*, the *Pacific Tourism Statistics Strategy 2021–2030*, and the *Digital Strategy 2021–2025* as the governing frameworks for sustainability and digital transformation in tourism in the Pacific in the context of the COVID-19 pandemic.

The *Pacific 2030 Sustainable Tourism Policy Framework* is a comprehensive road map to advance sustainable tourism in the Pacific. It recognized that there is no one-size-fits-all solution to sustainable tourism because Pacific destinations are at different stages of development and maturity. Thus, this framework was designed to cater both for countries that are well advanced with developing and implementing sustainable tourism practices and for those in the early stages of tourism development.

The framework highlighted the importance of all stakeholders, within, between, and outside government working together to succeed in making tourism more sustainable across the region. It outlined the

roles of all relevant stakeholders in its successful implementation, which included governments and administrations, civil society organizations, private sector representatives, regional organizations, development partners, the media, and other stakeholders.

The need for a performance-monitoring mechanism to measure the implementation of the Pacific framework was recognized to track progress at the regional level while supporting national advancement. Solid evidence is needed to demonstrate to tourism stakeholders that investing in sustainable tourism initiatives delivers results. Thus, the *Pacific Tourism Statistics Strategy 2021–2030* was also developed. The *Digital Strategy 2021–2025* was then developed to facilitate digital transformation in Pacific tourism.

The SPTO developed the *Pacific 2030 Sustainable Tourism Policy Framework*, the *Pacific Tourism Statistics Strategy 2021–2030*, and the *Digital Strategy 2021–2025*, in close collaboration with tourism stakeholders, including representatives from regional agencies, national governments, industry, community organizations, and multilateral and bilateral development partners. The SPTO also harnessed technical, financial, and institutional support from multilateral and bilateral partners in developing their framework and strategies. This will also be critical to successful implementation, given the SPTO's resource constraints.

Source: Authors' compilation based on the SPTO's presentation and other SPTO official regional documents.

pushing and shepherding the sustainable tourism agenda at the country or regional levels is important. This is true whether it involves individuals (e.g., high-level officials at the national or local levels), government agencies, or organizations, because it means addressing the mixed and potentially conflicting agendas of a multisector, multilayered, and diverse group of stakeholders.

Digital Transformation of Tourism

As noted, the tourism sector adopted new digital technologies and platforms early, such as online services in travel and tourism. It has also been frequently noted that COVID-19 catalyzed digitalization of tourism, as governments sought effective ways of managing the movement of peoples and businesses innovated on product offerings and delivery of services. Post-pandemic, embedding digitalization is critical for a more agile and resilient tourism sector. According to ADB (2021), the focus needs to be on how smart technologies and digitalization can improve tourism sustainability by strengthening management practices, promoting effective resource use, and influencing consumer behavior.

Capitalizing on new technological solutions for smart tourism and sustainable tourism development, in turn, requires significant investment in digital infrastructure and digital skills (ADB 2021). The gaps in digital readiness among countries are significant,

and finding solutions to bridge them is a challenge. Regional cooperation and development organizations can play key roles in facilitating access to smart tourism development finance and promoting regional knowledge-sharing platforms (Weltman et al. 2024). Regional commitments can also enable member countries to push for domestic reforms and benefit from the opportunities of digitalization of services. Uneven development across and within countries should also be seen as an opportunity for regional cooperation in digital regulations and issues (ADB 2023).

Thus, policy recommendations have been identified to address the policy gaps or missing provisions in regional agreements among various regional groupings in Asia and the Pacific (ADB 2023). In particular, the following provisions need to be incorporated in regional agreements to deepen regional cooperation for overall digital transformation that would also be supportive of digital transformation in tourism:

- (i) data protection and privacy,
- (ii) intellectual property,
- (iii) consumer protection,
- (iv) digital identity,
- (v) data sharing,
- (vi) quality of service,

- (vii) artificial intelligence,
- (viii) cross-border data flows,
- (ix) digital trade standards,
- (x) regulatory fragmentation, and
- (xi) inclusivity and digital trade.

Many of the recommendations involve establishment of regulatory frameworks and cooperation mechanisms where they are missing, harmonization of policies or regulations, standardization or adoption of international standards, and adoption of multistakeholder approaches.

The need for a multisector approach comes to the fore amid issues such as digital transformation of tourism that goes beyond the ambit of the ministries of tourism. Partnerships with the private sector are also important. For example, Singapore demonstrated how strong government support and public-private partnerships for the digital transformation of the tourism sector made Singapore among the economies with the highest level of smart tourism readiness. In the Pacific, the SPTO's active role is again evident, as it assessed and developed a program to address the region's diverse digital needs, with support from bilateral and multilateral partners. Its sustainable tourism framework also explicitly leverages technology to ensure cultural preservation and environmental stewardship. Support from the Pacific Private Sector Development Initiative is also available to harness opportunities for greater digitalization of tourism in the region.

Measuring and Monitoring Tourism Sustainability

As in other economic sectors, sound tourism policies need solid evidence, which makes improving tourism data a priority area for intervention. Economic measurement of tourism has improved significantly at the national level in the last 20 years, especially with the development of the Tourism Satellite Account. But much remains to be done to measure the subnational level, which can be represented by a region, city, or a specific tourism destination, and that goes beyond measuring the economic impacts of tourism. Regional Tourism Satellite Accounts have been developed based on the Tourism Satellite Account. However, they have practical limitations, such as insufficient quality of available tourism statistical data and significant resources and capacities required; also, they do not provide all that is needed for tourism impact analysis, especially impacts on the environment and local communities (OECD 2016). Furthermore, many countries still do not have a Tourism Satellite Account, including 16 of ADB's 49 developing member countries that currently receive ADB assistance on tourism.

UN Tourism's Statistical Framework for Measuring the Sustainability of Tourism (SF-MST) is an outcomes-based monitoring framework and aims to address key policy questions such as the environmental impacts of tourism, dependency of tourism on the environment, and specific socioeconomic impacts and dependencies of tourism (UN Tourism 2024a).

The statistical framework was adopted by all 193 UN member states during the 55th session of the UN Statistical Commission held on 27 February–1 March 2024 (UN Tourism 2024b). Since its adoption, the SF-MST became the universal framework for measuring the economic, environmental, and sociocultural aspects of tourism. The bigger challenge will then be its implementation, which will require capacity building for countries and data investment. Technical, financial, and administrative support from multilateral organizations will be key to the implementation of the framework, in coordination with UN Tourism both at the global level to create implementation tools and at the national level.

One shortcoming of tourism statistics during the pandemic was their inability to capture prevailing and rapidly changing conditions. Hence, the focus shifted to the use of big data for the dynamic analysis of tourism. The use of big data in the tourism sector began as early as the 1990s, with the emergence of various digital travel platforms. Enormous datasets are now being compiled from various sources, including communication systems, the web, business process-generated data, sensors, and crowd sourcing, which produce better data in terms of temporal and geographical granularity (Eurostat 2017). A good example is the Republic of Korea, where the government partnered with Korea Telecom to use digital technology and big data to improve safety, visitor management, and crowding using real-time monitoring of population movements.

Use of big data, however, also presents its own set of challenges. Governments need to put in place the necessary strategic and technical groundwork to harness the opportunities of big data and mitigate its risks, including protection of data privacy, fraud, and cybersecurity (ADB and UN Tourism 2021). Ultimately, the key issues in the use of big data are cost, technical skills, and capacity to work with unstructured datasets and transform them into coherent or usable forms to guide tourism planning and management. The latter is complicated by the absence of common definitions, standards, or frameworks for tourism to date.

Big data may also be especially useful in fire-fighting situations, such as the COVID-19 pandemic. For longer-term policy planning, a combination of methodologies and datasets would be adequate. But developing any measuring and monitoring system will require significant investment in terms of time, resources, technical expertise, ICT and digital infrastructure, and governance frameworks. Thus, the guiding principle should be to collect and use data that specifically guide policy actions. That is, it is important to make sure that what needs to be measured is what is being measured, to set clear targets, benchmark progress, and inform policy decisions. Also, what is needed may not be new data, but digitizing and linking together existing government data.

The role of regional cooperation and international organizations in this area is clearly indicated. A wide range of data development partnerships already involves ADB, the Organisation for Economic Co-operation and Development, UN Tourism, the World Bank, and other international organizations. There are clear economies of scale when developing institutional setups, digital applications, and

Regional Cooperation and Integration to Promote Sustainability and the Digital Transformation of Tourism

skills for big data. This makes development of regional platforms a more feasible option, instead of each country in a region developing its own, which is likely prohibitive for most developing economies.

In Asia and the Pacific, ADB, in collaboration with UN Tourism, would be ideal in this role, just as it already performs the role of regional monitor of economic and financial integration trends, developments, and vulnerabilities. Notably, the precursor of the current Asia Regional Integration Center⁵ was the Asia Recovery Information Center, a web-based platform to track the progress of recovery in the five economies hurt most by the 1997 Asian financial crisis (Indonesia, Republic of Korea, Malaysia, Philippines, and Thailand). The usefulness of monitoring high-frequency data came to the fore during that time, initially in monitoring not just annual but monthly or quarterly macroeconomic data and daily financial markets data in the aftermath of the 1997 Asian financial crisis. Online platforms for monitoring and reporting, available and

usable to the general public, were also a major innovation then. What the pandemic highlighted is the importance of tracking other noneconomic vulnerabilities that could have catastrophic crosscutting economic and social impacts.

Sustainability and digital transformation in tourism are long-term and ongoing processes, requiring comprehensive planning and implementation and entailing significant resources. Given the continuing importance of tourism in many economies across Asia and the Pacific, there is a need to continue transforming the tourism sector toward long-term growth, resilience, and inclusivity.

⁵ Launched in October 2006, the Asia Regional Integration Center website (<https://aric.adb.org/>) is a one-stop knowledge and information portal on regional integration and cooperation progress and initiatives in Asia and the Pacific to support the implementation of ADB's regional cooperation and integration strategy.

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