

Building the Resilience of Small States

A Revised Framework

Edited by Dr Denny Lewis-Bynoe



The Commonwealth

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Commonwealth Secretariat
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Foreword

The studies collated in this book were commissioned by the Commonwealth Secretariat to help to further improve the Commonwealth Resilience Framework: a conceptual framework for identifying policy measures for building the resilience of small states. For over three decades, the Commonwealth has championed the cause of small states by raising international awareness of their vulnerability and their sustainable development needs. The Commonwealth Resilience Framework includes an index to measure countries' ability to absorb external shocks caused by adverse global economic conditions, natural disasters and extreme weather events, and an assessment tool to identify key policies for building resilience that can be embedded in national planning.

Building resilience is an important element of efforts by small states to withstand inherent and policy-induced vulnerabilities and to fully embrace and benefit from globalisation. In 2004, the Secretariat and Professor Lino Briguglio of the University of Malta developed a resilience framework that identified the key requirements for resilience as macroeconomic stability, market efficiency, good governance, good environmental governance, and equitable and inclusive social development. This framework was successfully employed to conduct vulnerability/resilience profiling on the ground in three small island states: Saint Lucia, Seychelles and Vanuatu. The findings were published in *Profiling Vulnerability and Resilience: A Manual for Small States* (Briguglio et al. 2010).

The global economic crisis of 2008–2010 underscored the importance of strong institutions to countries' ability to cope with and respond to shocks, in particular the financial regulatory regime – an element not explicitly included in the original resilience framework. Small states found it especially challenging to recover from the crisis and experienced a period of prolonged economic downturn that lagged significantly behind the global recovery. In addition, environmental resource management and social development issues were not adequately captured in the original work, largely because of lack of data. Both these omissions were the prompt for the Secretariat to revisit and revise the resilience framework as part of its work to address the development challenges of small states.

In 2013 the Secretariat convened a group of experts from small states across economic, social and environmental disciplines to contribute to the development of the resilience framework. The four resulting studies form the main chapters of this book.

The studies provide insights into how to build resilience, inform effective policy formulation for small states, and identify potential areas for regional and international

development partners to provide support. With the rich analysis and wealth of information on addressing development challenges of small states, this book will be of interest to policy-makers in small states, experts and academics working in this area.

Cyrus Rustomjee

Director

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Abbreviations and acronyms

ACP	African, Caribbean and Pacific Group of States
AIMS	Africa, Indian Ocean, Mediterranean and South China Sea
AMFX	adjusted market flexibility index
AMFX	“Adjusted” Market Flexibility (Component of the ERI)
AOSIS	Alliance of Small Island States
BPOA	Barbados Programme of Action
CARICOM	Caribbean Community Secretariat
CDP-EVI	The Economic Vulnerability Index of the UN Committee for Development Policy
CITES	Convention of International Trade in Endangered Species
CMS	Convention on the Conservation on Migratory Species
COP	Conference of the Parties (of UNFCCC)
CPC	Central Product Classification
CPI	Corruption Perception Index
CPIA	World Bank’s Country Policy and Institutional Assessment
CSME	Caribbean Community Single Market and Economy
CSS	Commonwealth small states
DBI	Doing Business Index (of the World Bank)
DSI	Dependence on Strategic Imports (Component of the EVI)
DST	Disaster Proneness (Component of the EVI)
EC	European Community
ECFIN	DG Economic and Financial Affairs of the European Commission
ECOSOC	Economic and Social Council of the United Nations
EEA	European Environment Agency
EFWI	Economic Freedom of the World Index
EH	Environmental Health (Component of the EPI)
EKC	Environmental Kuznets Curve
ENV	Environmental Management (Component of the ERI)
ENVI	Environmental Vulnerability Index
EPI	Environmental Performance Index
ERI	Economic Resilience Index

ERIRS	Rescaled Economic Resilience Index
ERI	Economic Resilience Index
ESCAP	Economic and Social Commission for Africa and the Pacific
ESCAPUN	Economic and Social Commission for Asia and the Pacific
EU	European Union
EV	Ecosystem Vitality (Component of the EPI)
EVI	Economic Vulnerability Index
EVIRS	Rescaled Economic Vulnerability Index
EXC	Export Concentration (Component of the EVI)
EXN	export concentration
FDI	Foreign Direct Investment
FNP	Financial Prudence (Component of the ERI)
FNR	Financial Riskiness (Component of the ERI)
GCI	Global Competitiveness Indicators
GDP	Gross Domestic Product
GEF	Global Environment Facility
GNI	Gross National Income
GVI	Geographic Vulnerability Index
GVN	Governance Index
GVN	Governance (Component of the ERI)
HDI	Human Development Index
ICT	Information and Communications Technology
IDA	International Development Association (of the World Bank)
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
ISO	International Standards Organisation
ITU	International Telecommunications Union
IUCN	International Union for the Conservation of Nature
LDC	Least Developed Country
LFS	Labour Force Surveys
LSMS	Living Standards Measurement Survey
MARPOL	International Convention for the Prevention of Pollution from Ships
MDGs	Millennium Development Goals
MEAs	Multilateral Environment Agreements
MFx	Market Flexibility (Component of the ERI)
MICS	Multiple Indicator Cluster Surveys

MS/BPOA	Mauritius Strategy for the Further Implementation of the Barbados Programme of Action
MSI	Mauritius Strategy for Implementation
NLS	National Literacy Surveys
NVS	National Victimisation Surveys
OECD	Organisation for Economic Co-operation and Development
OECS	Organization of Eastern Caribbean States
OPN	Trade Openness Index (Component of the EVI)
POP	Population Size measured in logs
R2	Correlation Coefficient
RAMSAR	Convention on Wetlands of International Importance, especially as Waterfowl Habitat
SADC	Southern African Development Community
SGD	St George's Declaration
SIDS	Small Island Developing States
SMEs	Small and Medium Sized Enterprises
SOC	Social Development (Component of the EVI)
SOPAC	South Pacific Applied Geoscience Commission
SRHS	sexual and reproductive health surveys
STB	Macroeconomic Stability (Component of the ERI)
SVE	Small Vulnerable Economies
SVG	St Vincent and the Grenadines
SVI	Social Vulnerability Index
UNCED	UN Conference on Environment and Development
UNCTAD	UN Conference on Trade and Development
UNDESA	UN Department of Economic and Social Affairs
UNDP	UN Development Programme
UNEA	UN Environment Assembly of UNEP
UNEP	UN Environment Programme
UNESCO	UN Educational, Scientific and Cultural Organisation
UNFCCC	UN Framework Convention on Climate Change
V&R	Vulnerability and Resilience
WGI	World Governance Indicators
WHO	World Health Organization

About the authors

Professor Lino Briguglio directs the Islands and Small States Institute of the University of Malta. He was formerly head of the Economics Department and of the Banking and Finance Department at the University of Malta, as well as director of the University Gozo Campus. For a time he was also chief executive officer of the Foundation for International Studies at the University of Malta. His main area of interest is islands and small states studies, in particular economic aspects, and he has authored many publications on resilience building in small states covering the conceptualising and measurement of economic resilience. Professor Briguglio is known internationally for his seminal work on the ‘vulnerability index’, which led to worldwide interest and to many quantitative studies on economic vulnerability and resilience. He has also pioneered studies on economic resilience.

Dr Prakash NK Deenapanray holds a Bachelor of Systems Engineering (Interdisciplinary Program) from the Australian National University (ANU), an MSc in physics from the University of Pretoria (South Africa), a PhD in Semiconductor Physics, ANU, and an MBA in Technology Management from LaTrobe University (Australia). He has published more than 130 research articles, technical papers and policy papers, and has generated patents while developing novel thin-film silicon solar cell technologies for photovoltaic applications.

Dr Deenapanray has worked for the Mauritius Research Council and the United Nations Development Programme (UNDP). With the UNDP he managed the climate change (mitigation and adaptation) portfolio for Mauritius, and provided technical backstopping to the UNDP Regional Clean Development Mechanism (CDM) Capacity Development Program in Eastern and Southern Africa. Dr Deenapanray is currently a director of Ecological Living In Action (ELIA) Ltd. He is also a member of the UN Department of Economic and Social Affairs’ (UNDESA) Technical Advisory Group supporting the development of the Vulnerability–Resilience Profile (VRP) methodology for small island developing states (SIDS). Since 2012, he has been a member of the UN Environment Programme’s (UNEP) Expert Group for developing an Inclusive Green Growth Index. He was recently nominated as a member of the Mauritius Sustainability Index Supervisory Committee.

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Previously, Dr St Bernard worked as a statistician in the Central Statistical Office, Trinidad and Tobago, during the period 1980–87. He has also served on a number of cabinet-appointed committees and technical advisory groups within the Government of Trinidad and Tobago. Dr St Bernard has travelled widely, presenting numerous scholarly papers at international conferences and acting as a resource person at several regional and international workshops.

Chapter 1

Overview

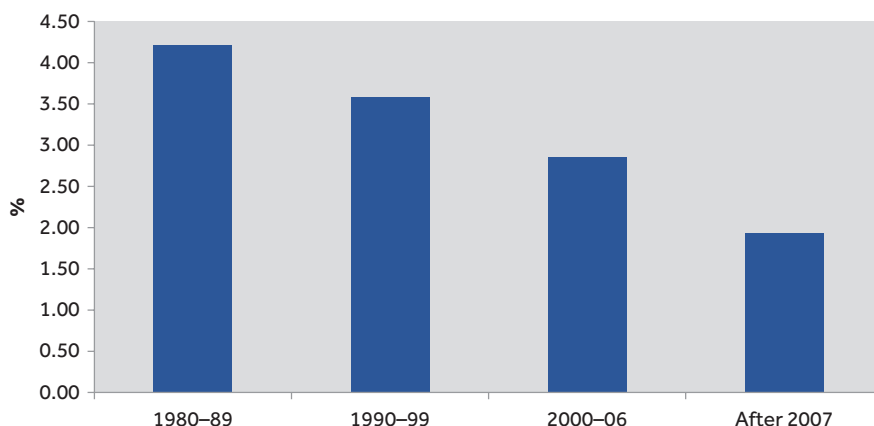
Denny Lewis-Bynoe

1.1 The case for building resilience

Small states face a unique set of development challenges posed by their small size, notably narrow production and export bases, limited resources and capacity constraints. These characteristics heighten their susceptibility to economic and climate related shocks, which are likely to increase in frequency and intensity with climate change and globalisation. While the latter undoubtedly creates opportunities for small states, the accompanying integration of markets and openness of small economies means greater exposure to external shocks. Each shock wave further erodes their economic and social gains, hindering their ability to respond to and cope with future shocks. This was especially evident during the 2008–10 global economic recession. Climate change adds greater uncertainty to future growth prospects and added costs.

Undoubtedly, these developments have stymied the efforts of small states to achieve sustainable development. For a large number of small states the result has been crisis response-induced debt burdens, for which accelerating economic growth is critical – yet the possibilities for such growth appear limited. There has been a general slowing of growth in most small states since the 1980s (see Figure 1.1), signalling an inability of small states to fully capitalise on the opportunities offered by globalisation.

Figure 1.1 Growth in small states, 1980–2012



Source: International Monetary Fund (2013).

These events are taking place at the same time as a diminishing level of support from the international community to small countries as a result of their relatively high gross domestic product (GDP) per capita. The high per capita incomes of some small states are viewed by their development partners as an indicator of their success, but research suggests they mask their lack of progress in many areas. The evidence of this is found in their limited achievement of the Millennium Development Goals (MDGs) to date (Roberts and Ibitoye 2012). While a key blockage has been small states' internal capacity deficits, a lack of access to financial resources also compromises their ability to respond effectively to these shocks, adversely altering their growth trajectory. They face a cycle of lagging growth, and shocks that further diminish their ability to respond to future shocks. Without international support this in turn increases debt burdens, creating a drag on the economy that hampers growth.

Given the inherent nature of the vulnerability of small states, the important question is what, if anything, can be done? Inherent vulnerability – unlike poverty – cannot be changed. Small states can cope with their vulnerability only by building their ability to both recover quickly from, and withstand, harmful external shocks. Associated with the flexibility of an economy, building resilience encapsulates the social, economic and environmental aspects of development. Misleading in its simplicity, the notion of building resilience is overshadowed by the evidence of small states' limited success in doing so. Determining an appropriate blend of policies to achieve this desired result can be challenging and requires a strategic approach. The Commonwealth recognised this and, building on decades of research on the development challenges of small states, sought to develop a framework for building the resilience of small states in collaboration with Lino Briguglio of the University of Malta in 2004.

In a seminal study commissioned by the Commonwealth, Briguglio posited that small states' ability to effectively withstand and bounce back from external shocks depended on the extent to which they employed policies conducive to macroeconomic stability, market efficiency, good environmental management and political governance, and social cohesion in national plans and strategies (Briguglio et al. 2006). With small states accounting for 59 per cent of its membership, the Commonwealth undertook to further advance this work and developed a resilience-building assessment tool kit. This was intended to help national stakeholders agree priority areas for policy intervention and technical and financial assistance by the wider international community. The resilience-building assessment tool kit provided a useful framework for integrated development planning that would reduce risk and volatility. The tool kit was piloted in three Commonwealth small member states, namely Seychelles, St Lucia and Vanuatu, representing the three small states regions, in 2008–09.

Broadly, the resilience assessment/profiling exercise involved identifying the principal sources of vulnerability for a country and the effects these exogenous shocks have had on that country. The analysis included relevant indicators and data such as exports, developments in markets, sources and the extent of market shocks, and strategic imports and it explored the resilience-building efforts that had served the country best in addressing its vulnerabilities. This exercise also incorporated a capacity-building element, with each country assisted to build the capacity of

country officials to undertake the self-assessment. The findings were published by the Commonwealth in the book *Profiling Vulnerability and Resilience: A Manual for Small States* (Briguglio et al. 2010). This study confirmed the high vulnerability of small states and their varying degrees of resilience. According to Briguglio et al. (2010), the problems of small states had been hugely magnified by the global economic downturn, from which they were beginning to recover – but in unequal measure – at the time of the study. The authors prescribed resilience-building policies for these small states aimed mainly at promoting economic stability and competitiveness, principally by improving the functioning of the product and labour markets, encouraging private sector development and adopting prudent approaches in public finances.

The approach of profiling vulnerability and resilience to articulate country-specific policies has been well received by the international community. Other institutions such as the United Nations (UN) have been exploring vulnerability and resilience, prompted by the calls from small island developing states (SIDS). In 1992, a UN Conference on Environment and Development ('the Rio Earth Summit'), Agenda 21 noted that SIDS face special challenges in planning for sustainable development, and agreed a Global Conference on the Sustainable Development of Small Island Developing States, which took place in 1994. The Barbados Programme of Action (BPOA), which emerged from that process, became the principal international framework for addressing the special challenges and constraints faced by SIDS in their implementation of sustainable development. The BPOA was followed up by the Mauritius International Meeting in January 2005, from which the Mauritius Declaration, a political statement reaffirming the continuing validity of the BPOA, adopted the Mauritius Strategy for Implementation (MSI) and made a commitment to its timely implementation. The Mauritius Strategy for the further Implementation of the Programme of Action for the Sustainable Development of SIDS highlighted outstanding, new and emerging concerns with respect to the sustainable development of SIDS.

The UN responded to repeated calls for ways to capture specific vulnerabilities and efforts to address them on a country-by-country basis during the Barbados Conference to the SIDS preparatory meetings, and developed a methodology called the Vulnerability Resilience Profile (VRP), which it has sought to pilot test in selected SIDS during 2014. The reflection of the international community on the post-2015 development agenda and progress in achieving the MDGs provides a pivotal point to reflect on these issues, and to establish a global development framework that takes account of the circumstances of small states. There is now a growing appreciation of the importance of making international systems, processes and institutions more responsive to the needs of the smallest and most vulnerable members. The third International Conference on Small Island Developing States 2014 (which is to be held in Samoa) will serve to focus international attention on small states, and has led to the international community agreement on 2014 as The International Year of SIDS.

As the international community approaches the end of the MDGs period, there are glaring gaps and patchy achievements by small states, particularly SIDS, prompting

a renewed call for a robust framework. During the preparatory meetings for the SIDS 2014 conference in 2013, delegates called for this work to be accorded priority attention. The intention is to build a robust model and consensus on its applicability and usefulness as an alternative basis for determining access to resources and graduation. A similar sentiment was shared by small states, policy-makers, their key development partners and experts during the Commonwealth third Global Biennial Conference on Small States in March 2014. The convergence of these events provides a unique opportunity to mobilise international support for small states, and a catalyst for redoubling efforts to build a more robust resilience framework. The work captured in this publication seeks to fill this gap.

Since the seminal work in developing the resilience framework, the importance of governance – that is, the role of institutions, systems and rules – previously acknowledged but not effectively captured, has been brought into sharp focus. The global financial and economic crisis of 2008–09 highlighted the importance of a number of factors in determining the ability of countries to respond to shocks. The lessons of this event cannot be ignored given the fallout from these failures, evidenced by the length and intensity of the global economic crisis, especially in small states. A weak financial and regulatory framework, and poor environmental management and social systems, can compromise the best efforts of countries, and these elements were not adequately captured in previous frameworks. The approaches to addressing these shortcomings have been varied. Seth and Ragab (2012), reviewing the frameworks proposed by different authors, concluded that the vulnerability–resilience frameworks developed so far did not adequately account for the dangers of the increasing frequency and severity of financial and economic shocks. The authors argued that post-2008 developments raised important questions about the systemic character of financial and economic shocks, and the ability of individual countries to withstand the most damaging and lasting effects of such uncertainty. Briguglio and Piccinino (2012) proposed a revision of the framework to, among other things, identify the different types of financial and economic shocks that most frequently face developing countries. The framework would also facilitate advocacy on global policies and international co-ordination mechanisms to minimise the frequency and severity of the shocks. They incorporated an index entitled the ‘soundness of banks’ in the resilience index.

In 2013, the Commonwealth, recognising the need for a revised vulnerability–resilience framework, convened a group of experts to revisit the Commonwealth Secretariat/University of Malta resilience framework, as well as the wider body of knowledge on resilience. The Technical Working Group (TWG), as they were called, comprised experts from the fields of economics, sociology, governance and the environment from the three small states regions (Caribbean, Pacific and Africa, Indian Ocean, Mediterranean and South China Sea [AIMS]), to ensure adequate coverage of the diverse range of small states issues.

Arising from their deliberations, the group noted the need to (a) update the resilience index on a regular basis, given that it is based on policy choices that are subject to change; (b) capture the downsides of an unregulated or badly regulated market,

particularly in the financial sector; (c) factor in environmental management as a component of the resilience index; and (d) include social development and social cohesion, which are important contributors to economic resilience building. Based on their recommendations, the Commonwealth commissioned the four studies that form the basis of the four main chapters of this book.

Chapter 2: A Vulnerability and Resilience Framework for Small States, written by Lino Briguglio, presents a revision to the Commonwealth Secretariat/University of Malta resilience framework (2004) to better capture governance, in particular, financial regulatory regimes and environmental management. Briguglio proposes a vulnerability and resilience framework with wider country coverage, which includes an environmental management component, updated data and a financial risk indicator. He posits that there is a connection between economic resilience-building and factors that are conducive to investment attraction and therefore growth, including good economic, social and environmental governance. Consequently, he encourages small states to pursue appropriate policies, but argues that this must be coupled with supportive regional and international systems and policies, if small states are to improve development outcomes.

International support for small states is required in accessing resources on favourable terms to fund critical infrastructure projects, and filling capacity gaps that hamper their ability to cope with emerging economic, social and environmental issues. Moreover, grappling with the requirements of an increasingly interconnected global economy necessitates improved access to trade finance and support in adapting and innovating. Trade represents a highly significant component of growth, development and poverty reduction efforts in small states, and so addressing deficiencies in trade-related infrastructure, production and cost efficiencies is important for small states. Access to shock facilities and other support is necessary for small states. Equally important is assistance in addressing their significant debt burdens, which can act as a further drag on growth, constraining their ability to achieve the sustainable development goals.

An important recommendation of this chapter is that aid support should be aimed at promoting and supporting economic stability, market efficiency, social development and environmental management. The author argues that such support is likely to have a lasting effect on recipient countries. He further recommends the inclusion of a vulnerability criterion in schemes with small states as beneficiaries, as opposed to an income per capita criterion, noting that such a criterion more aptly captures the state of development for these countries.

Chapter 3: Developing a Governability Assessment Framework in the Context of Resilience Building in Small States proposes an assessment framework that tries to incorporate the special characteristics of a country's social-economic setting, as well as the prevailing governance system in place. The author, Jean Paul Fabri, defines governance as 'rule of law, an independent judiciary and property rights'. He considers not only the institutional arrangements, but also the interactions between all actors in the institutional environment including traditional institutions, as well as the institutional capacity to adapt, learn and reform itself. Although governance

is recognised as an important building block for resilience, he argues that current governance assessment models and the reality of many developing states, including small island states, are disconnected.

Fabri lays the groundwork for the development of composite indices, which capture this broad view of governance and are aimed at allowing practitioners to profile countries, identifying the best-fit practices and the weaknesses with valuable insights on appropriate policies. The indices he proposes focus on a number of pillars, including the principles and values that form the fabric of society and guide the institutional and political class, as well as underpin social cohesion, and the quality of the institutional set-up of a country, which includes elements of political participation, the electoral system, rule of law, the judiciary, the legislature and traditional institutions. In identifying priority areas for policy intervention, including those of best-fit practices, Fabri prepares a draft set of questions to inform the building of indices for each of the pillars in the form of a handbook and draws up a draft measure for one small state, namely Malta. At the core of the procedure lies a questionnaire that is based on all the elements outlined, which apart from being holistic in nature is able to capture examples of best-fit governance and chart a reform process for countries.

It is intended that the Malta case study will be illustrative of the methodology, and will be further refined and extended to a number of other small states. Although based on an initial country assessment, the framework and codebook, according to Fabri, have been shown to be comprehensive and holistic in their assessment of governance. From this single country case study, it is apparent that a diagnostic approach is needed to compile the report from the codebook. Various challenges exist in advancing the model, especially on a methodological level, which can be addressed only after testing it beyond single-country case studies. Further country case studies will add value to the analysis and a thorough research exercise is warranted across a number of sources. Fabri recommends that further research and development should be undertaken on both the conceptual model and the search questions that operationalise the framework.

Chapter 4: Strengthening Environmental Management in the Context of Resilience Building in Small States is jointly written by Prakash NK Deenapanray and Derrick Oderson. The objective of this study is to focus on environmental management in building resilience in small states. It provides key practical international, regional and national environmental policy options that support resilience building in small states. According to the authors, the process of managing environmental resources and services is complex and multifaceted given the nature of these resources. The building blocks for their effective management are equally complex and cover a broad range of environmental issues. Deenapanray and Oderson characterise the building blocks for the effective management of environmental resources and services into broad groups: pollution management; information, knowledge and capacity enhancement; cleaner technology; resource management; and the environmental management system that is put in place to manage the use of environmental resources and services. In addition, using the building blocks as a basis, the approaches and concepts that

underpin the effective management of environmental resources and services can be identified easily, as can the technologies that could be employed to build resilience. Environmental governance is identified as one of the building blocks for the effective management of environmental resources and services. The authors propose a set of criteria for assessing the distinguishing characteristics of environmental mechanisms.

This study also includes an assessment of the quality of environmental governance in Commonwealth small states (CSS). From this analysis, the authors conclude that the pace towards comprehensive environmental legislation in the Caribbean CSS seems to be slower than in the other CSS regions. Additionally, in the Caribbean, Commonwealth small states' efforts are under way to give meaning to the notion of a single environmental space, as envisioned by the Caribbean Community Single Market and Economy (CSME). The authors suggest that lessons could be drawn from the experiences of the Commonwealth small states that are members of the European Union, as their national laws are significantly influenced by European Community environmental law. The authors provide a comprehensive review of the indicators of environmental governance for each CSS.

Chapter 5: Strengthening Social Cohesion in the Context of Resilience Building in Small States, with Reference to Commonwealth Small States, authored by Godfrey St Bernard, seeks to identify policies that maintain and even strengthen social development and cohesion in the context of building resilience in small states. St Bernard notes that social development captures the extent to which effective social dialogue takes place in an economy, which in turn would enable collaborative approaches towards the undertaking of corrective measures in the face of adverse shocks. He postulates that resilience building, including social cohesion, is instrumental in facilitating social development initiatives in small states. Accordingly, moves towards social development hinge upon the pursuit of policies that foster social cohesion and, by extension, social resilience building. According to St Bernard, building resilience is an antidote for vulnerability risks. The origins of such risks stem from the disintegration of societies in small states, due principally to their inability to withstand the negative effects of domestic and international shocks, which are not always sudden, but could be gradual. In his examination of this issue, St Bernard finds that vulnerability due to the inability to respond to stimuli that have evolved through gradual processes of change has not been regularly articulated in many of the discourses that give primacy to external shocks, which are often sudden. This failure to account for shocks generated through a gradual process has resulted in the omission of social forces. These are manifest in processes of social change, which often occurs at a slower pace than change predicated on economic and environmental forces.

The author examines the key parameters describing population characteristics to permit the generation of indicators that are indicative of material well-being and access to opportunities among such populations. Social development, in the context of individuals, and collectivities of individuals such as households, institutions and nations as entities, hinges upon gauging social aspects of resilience that encapsulate social cohesion.

St Bernard, using a set of proposed population clusters that reflect medium-term socio-demographic characteristics and dynamics for 31 CSS, proposes different policy agendas. Agendas associated with wealth creation relate to strengthening social aspects of resilience impacting financial capital; while agendas associated with exposure to education, access to healthcare, and knowledge, attitudes and practices in the context of HIV/AIDS relate specifically to strengthening social aspects of resilience impacting human capital. Exposure to education is also contingent upon being healthy. This is a function of adequate food security coverage and access to healthcare. Both exposure to education and access to healthcare impact an individual's engagement in economic activity, with all three domains impacting the accumulation of wealth. Other related domains such as the use of information and communications technology (ICT), social protection and fertility are associated with all of the aforementioned. Policy agendas impacting social protection also impact social aspects of resilience pertaining to public order and public safety.

St Bernard establishes five population clusters, which classify CSS in accordance with key demographic and socio-economic characteristics that inform prospective sets of cluster-specific policy agendas. He develops indicators to gauge the strengthening of resilience-building capabilities among individuals as the primary beneficiaries. According to the author, whether in the context of geographic region, gender, wealth status, disability status, nativity, ethnicity or other socioeconomic background characteristics, policy agendas should also set goals that are tantamount to the attainment of greater equality and equity regarding the allocation of human needs.

1.2 Conclusion

Given the complexity of the environment within which small states operate, inextricably tied to global events and facing lower levels of support, a framework for building resilience is paramount. The key findings from these studies are that:

- Economic resilience building is multifaceted and this calls for a holistic approach where social, political and environmental governance policies accompany and support economic policies.
- Given that small states tend to be highly exposed to external shocks, they should assign major importance to resilience-building policies and should embed such policies into their national plans and strategies.
- Small states will need international support, and multilateral and bilateral donors should effectively factor in a vulnerability criterion in their schemes to support small states.
- There is further work to be done, especially in the areas of governance, environmental and social development, in building a robust resilience framework. Existing data gaps hamper this process and must be addressed.

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Chapter 2

A Vulnerability and Resilience Framework for Small States

Lino Briguglio

2.1 Introduction

This chapter presents a revised vulnerability/resilience framework, building on the work of Briguglio et al. (2009).¹ The chapter also revises and updates the economic vulnerability and economic resilience indices, the former associated with exposure to external shocks and the latter with policies that can enable a country to minimise or withstand the negative effects of such shocks. A number of policy implications are derived from the study presented in this chapter.

The economic characteristics of small states are well documented, and include (a) a very high degree of economic openness due to their dependence on exports and imports, mostly because of their small domestic markets and lack of natural resource endowments; (b) a high degree of export concentration, mostly due to their small economic size, leading to diversification constraints; and (c) high dependence on strategic imports, such as fuel and food. These factors are associated with economic vulnerability, as they render a country highly exposed to external shocks.

There are other characteristics of small states that pose economic disadvantages, but do not lead directly to economic exposure to external economic forces. These include limited ability to exploit economies of scale – mostly due to overhead-cost indivisibilities associated with small-scale operations – as well as limitations on the effectiveness of domestic competition policy, due to the ease with which a small market can be monopolised or dominated by a few firms.

In the case of small island states, there are additional economic disadvantages associated with high international transport costs and uncertainties relating to the delivery of industrial supplies, due to insularity and remoteness. In addition, many small island states are archipelagos, made up of dispersed islands, leading to further problems associated with transport and fragmentation of administrative arrangements. Some small island states are also prone to natural disasters and are highly vulnerable to climate change.

This chapter is organised in eight sections. Section 2.2, which follows this introductory section, discusses the concept of economic vulnerability with reference to the literature on the subject. Section 2.3 focuses on the concept of resilience and the juxtaposition of vulnerability and resilience, again discussed with reference to the literature. Section 2.4 and section 2.5 present revised vulnerability and resilience indices, building on Briguglio et al. (2009), using updated data and additional

components. Section 2.6 uses these indices in the context of a resilience framework, accompanied by an analysis of the results, including country comparisons. Section 2.7 puts forward policy proposals based on the implications of the vulnerability/resilience framework, while section 2.8 concludes the chapter.

2.2 Economic vulnerability

2.2.1 The meaning of economic vulnerability

The meaning of the word ‘vulnerability’ originates from its Latin root *vulnerare*, meaning ‘to wound’. This etymology associates the word with exposure to damage or harm and with precariousness. The term ‘economic vulnerability’ when applied to a country is generally used to refer to that country’s susceptibility to being harmed by external economic forces as a result of exposure to such forces.

In the literature on economic vulnerability and small states, there are two major stances regarding the advantages and downsides of economic vulnerability. Most authors dealing with this subject consider economic vulnerability to be a disadvantage. In the first published version of the vulnerability index, Briguglio (1995) argued that high vulnerability scores are undesirable because they measure the extent to which a country is exposed to harmful external shocks. That small economic size poses economic disadvantages is also a contention put forward by other authors including Atkins et al. (2000), Crowards (2000) and Turvey (2007). Cordina (2008) – referring to the criticisms posed by Baldacchino (2006) and Armstrong and Read (2003), who criticised the vulnerability paradigm on the grounds of irrelevance to actual economic situations and possible misspecification – contends that such criticism fails to sufficiently distinguish between economic vulnerability and lack of viability of a state. The author argues that an economy may still be viable and indeed successful in spite of its vulnerability if it develops appropriate response mechanisms, termed as ‘economic resilience’, as shown by the vulnerability–resilience framework developed by Briguglio et al. (2006).

In an earlier paper, Cordina (2004) argued that volatile growth is damaging and the downswings are not automatically compensated for by episodes of equal upswings, as the harmful effect of a given negative growth rate is not cancelled by an equally positive growth rate, basing his arguments on neoclassical theory of diminishing returns to factor inputs. This view is supported by Briguglio (2011), arguing that, in the real world, negative shocks lead to declines in real gross domestic product (GDP) from which it is difficult to recover, even when these are followed by positive growth rates – particularly if the downswings lead to malnutrition, disease and possibly deaths. Even in relatively advanced countries, GDP declines can lead to persistent unemployment through what is known as ‘hysteresis’. Bishop (2012), overviewing the different stances regarding the vulnerability hypothesis, contends that small states can and do engage in a range of productive and highly profitable activities. Yet this does not alter the fundamental fact that they still remain intrinsically vulnerable. For this reason, Bishop argues that the retention of the concept of vulnerability, properly defined and understood, is essential in conceptualising the realities of small state development.

These views are contested by Armstrong and Read (2002), who refer to the evidence that the GNP per capita of small states tends to be higher, on average, than that of larger states. Armstrong and Read (2002) further attempt to show that the vulnerability index proposed in Briguglio (1995) correlates positively, not negatively, with GDP per capita and therefore the argument that vulnerable countries are disadvantaged does not 'hold water'. This argument was reiterated by Armstrong and Read (2003), who, while agreeing that small states do indeed face very serious challenges, argue that these states have developed strategies which have allowed them to successfully overcome such challenges. Baldacchino and Bertram (2009) assert that the argument that small states are 'vulnerable' is deterministic in that it associates such states with weakness. They also maintain that this argument is diplomatically driven, and is intended to seek generous development and diplomatic assistance from the international community in response to the so-called 'special needs' of small states. An influential paper that attempted to downplay the constraints faced by small states is authored by Easterly and Kraay (2000), who argue that the fact that many small states enjoy a higher per capita GDP than larger states can be explained in terms of the productivity advantage enjoyed by these states. The authors intimate that small states have perhaps received excessive attention from the literature, and therefore they should be treated in the same way as large states and receive the same policy advice as large states do. Other authors who seem to conclude that smallness is an advantage include Domeland and Sander (2007), who argue that small African countries tend to have stronger governance, more political stability, a lower incidence of state failure, less ethnic fractionalisation and lower occurrence of armed conflict than larger Sub-Saharan African countries.

Although the two major stances regarding the advantages and downsides of economic vulnerability would seem to be confrontational, the basic difference between the two viewpoints hinges on whether resilience building is automatically triggered in small economies or is a matter of policy choice. Baldacchino and Bertram (2009) and Armstrong and Read (2002) would seem to suggest that the economic vulnerability associated with small economic size automatically sparks off policies conducive to growth. In reality, there are many cases of small states that are highly vulnerable and badly governed economically, ending up in what Briguglio et al. (2009) call the 'worst case' scenario – which is characterised by high exposure to shocks and lack of resilience policies.

2.2.2 The vulnerability index

During the early 1990s, particularly within the United Nations system and the Commonwealth Secretariat, it was realised that the concept of vulnerability needed to be operationalised and measured in the form of an index relating to the extent to which economies were prone to harm by external shocks. Various vulnerability indices have been developed for this purpose and, in general, these indices indicate that small states, particularly island ones, tend to be more economically vulnerable than larger countries.²

Inherent versus policy-induced features

Since its earliest version (Briguglio 1992), the vulnerability index was an attempt to identify inherent features that are permanent or quasi-permanent, which lead to high exposure to external economic shocks, as distinguished from policy-induced measures. This approach was intentional to exclude any self-inflicted economic weaknesses. For example, in the case of small island developing states (SIDS), a small domestic market is an inherent feature, and this leads to high dependence on imports and exports, whereas inflation and public debt are policy-induced features, as these can be highly influenced by government measures. This argument was reiterated by Briguglio et al. (2009), who categorised policy-induced factors under the heading of resilience, which could mitigate or possibly exacerbate the harm from exposure to external shocks.³

Causes and manifestation of vulnerability

Briguglio (2004) argued that it is important to distinguish between the cause of the phenomenon that is to be measured and the manifestation of such a phenomenon. Thus, for example, with respect to economic vulnerability, one of the causes may be high dependence on international trade, whereas the manifestation could be export volatility. Variables representing the causes of the phenomenon are more suitable to measure that phenomenon than variables purporting to represent its manifestation. One reason for this is that a manifestation may have various causes – for example, export volatility may not be the effect of external shocks only, but could be highly influenced by internal policy measures. On the other hand, there may be instances where the volatility effects of vulnerability are not manifested. This occurs, for example, when vulnerability is mitigated by resilience-building policies, so that exposure to economic shocks would be counteracted by sound economic governance.⁴

Methodology of the Briguglio-type vulnerability index

Briguglio and Galea (2003), in constructing a vulnerability index, associated economic vulnerability with openness,⁵ export concentration⁶ and dependence on strategic imports.⁷ In an earlier study, Briguglio (1995) included proneness to natural disasters as a factor associated with economic vulnerability.⁸ The main advantages of the Briguglio-type economic vulnerability index (EVI), which according to Wang (2013) is the most prominent one in the literature on EVI design, are the ease with which it is understood and the ease of calculation it allows.⁹

The basic problem with the methodology utilised by Briguglio in his various studies on the EVI, and by other authors who have utilised a similar methodology, is that the variables, though carefully and judiciously chosen, were subjectively selected – so much so that Briguglio himself, Chander (1996), Wells (1996) and Crowards (1999, 2000a) experimented with various possible components.

Another criticism relates to the use of trade openness as an indicator of vulnerability. Briguglio, in his various studies on the EVI, argues that trade openness is an inherent feature of an economy. However, Guillaumont (2009) argued that trade openness is a policy-induced variable and is an indicator of the competitive strength of a country.

The counter-argument to Guillaumont's view is that, while export performance is indeed related to competitiveness, trade openness is a permanent feature of small states due to their small domestic market and limited resource endowments, and this is a source of exposure to shocks over which a country has no or very limited control.¹⁰

A common conclusion that emerges from most of the economic vulnerability indices described above is that small states, particularly island ones, tend to be more inherently economically vulnerable than other groups of countries, and this is in spite of the differences in the components and the approaches utilised.¹¹ It can therefore be said that in the literature there is a high degree of consensus in this regard. Cordina (2008) shows that seven out of the eight vulnerability indices that he reviewed had statistically significant positive correlation coefficients between country size and vulnerability scores, implying that in general the indices tend to agree that small countries are more economically vulnerable than larger ones.

2.3 Economic resilience

2.3.1 The meaning of economic resilience

'Economic resilience', as used in this chapter, refers to the extent to which an economy can withstand or bounce back from the negative effects of external shocks. As such, it can be considered as the obverse of economic vulnerability. The word 'resilience' originates from its Latin roots *resilire*, referring to the ability to rise again.

Briguglio et al. (2009) distinguished between economic resilience – which is developed and managed as a result of deliberate policy – and economic vulnerability, which is due to inherent features of the economy. The authors argued further that the term 'economic resilience' can be used in two senses, relating to the ability of an economy to (a) absorb the effects of external economic shocks and (b) counteract the harmful effects of such shocks. The ability of an economy to absorb external shocks is associated with the flexibility of an economy, enabling it to recover after being adversely affected by a shock. This ability will be severely limited if, for example, there are market rigidities. The ability of an economy to counteract shocks will be enhanced when the economy has room for manoeuvre, as is the case, for example, in a situation of a strong fiscal position, when policy-makers can utilise discretionary expenditure or tax cuts to counteract the effects of negative shocks.

2.3.2 Resilience-building policies

Briguglio et al. (2009) hypothesised that the economic resilience-building policies include those leading to:

- macroeconomic stability;
- market efficiency;
- good political governance;
- social development; and
- environmental governance.

Macroeconomic stability

Macroeconomic stability, or lack of it, is generally measured by variables that relate to disequilibrium, such as price changes, government fiscal deficit and debt, the current account of the balance of payments, unemployment and exchange rates. One manifestation of such disequilibria could be GDP volatility, leading to an unstable economy.

Briguglio et al. (2009), in associating macroeconomic stability with economic resilience, argued that stability is connected with the interaction between an economy's aggregate demand and aggregate supply. If aggregate expenditure moves in equilibrium with aggregate supply, the economy will be characterised by internal balance, as manifested by a sustainable fiscal position, acceptable price inflation and an unemployment rate close to the natural rate, as well as by an external balance, as reflected in the current account position of the balance of payments. These variables are highly influenced by economic policy and could be good indicators of an economy's resilience in withstanding adverse shocks.¹²

The macroeconomic stability component of the resilience index proposed by Briguglio et al. consisted of three variables, namely (a) the fiscal deficit-to-GDP ratio; (b) the misery index, made up of unemployment and inflation rates; and (c) the external debt-to-GDP ratio. Data for these variables were available for a reasonably wide set of countries spread over a spectrum of stages of development, size and geographical characteristics.

The government budget position relates to resilience of a shock-counteracting nature. This is because a healthy fiscal position would allow adjustments to taxation and expenditure policies in the face of adverse shocks.

Inflation and unemployment are associated with resilience or lack of it because, if an economy has low levels of unemployment and inflation, it is likely that adverse shocks would not impose significant welfare costs on it. In this sense, therefore, unemployment and inflation are associated with resilience of a shock-absorbing nature.

The external debt-to-GDP ratio was considered to be a good measure of resilience because a country with a high level of external debt may find it more difficult to mobilise resources in order to offset the effects of external shocks. Thus, this variable would indicate resilience of a shock-counteracting nature.

It should be emphasised again here that GDP fluctuations are the outcome of, among other things, two distinct factors, namely the inherent vulnerability of the economy to external shocks and the policy-induced measures to withstand or possibly exacerbate the effect of such shocks. It is therefore not a correct approach to take GDP fluctuations as an indicator of policy-induced resilience.

Market adjustment

As part of their resilience index, Briguglio et al. (2009) utilised an indicator of what they called 'market efficiency', measuring it by using the 'regulations' area of the Economic Freedom of the World Index (Gwartney and Lawson 2005).

The science of economics often views markets and their effective operation, through the price mechanism, as the best system for allocating resources and achieving economic growth. This does not, however, imply absence of government intervention in the provision of goods and services. It is generally accepted by economists that such intervention is warranted when markets fail to operate, such as in the case of public goods and externalities, and in the provision of services with a high degree of positive externalities, such as education, health and pensions (collectively called 'merit goods'). In addition, government intervention may be necessary to ensure that markets operate well, such as by enacting anti trust laws in the goods market and putting in place regulatory frameworks in the financial market.

Market efficiency requires flexibility so that demand and supply adjust to their equilibrium levels as rapidly as possible. Briguglio et al. (2009) argued that, if markets adjust rapidly to achieve equilibrium following an external shock, the risk of being negatively affected by such a shock will be lower than if market disequilibria persist. Indeed, with very slow or non-existent market adjustment, resources will not be efficiently allocated in the economy, resulting in welfare losses associated with shortages, unemployed resources and unutilised capacity. These considerations have important implications for shock-absorbing resilience.

The effective operation of the price mechanism, leading to, though not necessarily ensuring, optimal use of resources, requires that prices reflect the true cost of resources and that prices are not distorted through monopolistic practices and/or other market imperfections. Secondly, and very importantly in the context of the present paper, there needs to be flexibility in the economy which would allow goods, services, labour and capital to respond to the price signals in the economy.

Duval and Vogel (2008) contend, with regard to market flexibility, that the economically more resilient countries are the ones that have made most progress on market reforms. For instance, countries with rigidities in wage adjustment hinder workers' reallocation towards productive jobs following an economic shock, thereby delaying the return of employment and output to their initial levels. They argue, on the basis of empirical work, that their analysis provides strong evidence that heavy regulation dampens the initial impact of shocks, but makes it more persistent. The authors conclude that, in general, the literature indicates that market rigidities tend to protract the slump following adverse shocks.

A factor that has been associated with abusive behaviour in a free market relates to the financial sector. Briguglio et al. (2009) did not adequately take into account the destabilising effects of financial markets in the resilience index they constructed. Ocampo (2008) argues that in recent decades there has been an increased exposure of the real sectors of many economies to financial markets. To withstand macroeconomic vulnerability – that is, to build their resilience in the face of external shocks – Ocampo proposed a combination of prudential regulations, the deepening of the domestic financial markets and policies to regulate capital flows.

Ocampo argues that monetary policy transmission channels affect the resilience of a country in the face of economic shocks. A factor that is associated with such

transmission mechanisms is the liberalisation of the financial market. As Ocampo further argues, appropriate regulatory frameworks are important in this regard, given the possibility of excessive risk-taking, particularly in times of business cycle upswings, as evidenced in the financial crisis of 2007–08. This requires a well-functioning and well-regulated banking sector.¹³

Political governance

Good governance is associated with the safeguarding of the rule of law and property rights, as well as the delivery of efficient public services, through an authority that uses mechanisms, processes and institutions to manage the country's affairs.¹⁴ Briguglio et al. (2009) assumed that one of the pillars of economic resilience was good political governance. The authors measured the governance component of their resilience index by using the 'Legal System and Property Rights' area of the Economic Freedom of the World Index (Gwartney and Lawson 2005).

Briguglio et al. argued further that without good governance it would be more likely that adverse shocks would lead to economic and social chaos and unrest, thereby exacerbating the effects of economic vulnerability. On the other hand, good governance can strengthen an economy's resilience because external shocks would be better absorbed and counteracted in an atmosphere of predictable laws and credible policies.

Briguglio et al. (2009) also put forward an explanation of why the good governance component has been included alongside a market efficiency component in the resilience index. The market efficiency index emphasises the importance of freely and properly operating markets for allocative efficiency and, hence, relates to the ability of an economy to reallocate resources quickly and effectively following an economic shock. This neoliberal approach, which has been questioned recently with the market failures associated with the financial turmoil, is balanced by an emphasis on appropriate governance in order to foster economic resilience. Thus, the resilience index proposed by the authors considers properly functioning markets and a framework of appropriate governance as two essential aspects of economic resilience.

Social development

Briguglio et al. (2009) included a 'social development' component in their resilience index, and measured this component in terms of education and health, as measured by the non-income components of the Human Development Index (HDI).

They argued that social development and social cohesion are essential components of economic resilience, as these indicate the extent to which relations within a society are properly developed, enabling an effective functioning of the economic apparatus without the hindrance of civil unrest. They assumed that social development and social cohesion are positively related,¹⁵ as these are both associated with the extent to which effective social dialogue takes place in an economy, which, in turn, would enable collaborative approaches towards the undertaking of corrective measures in the face of adverse shocks. The positive relationship between social harmony and macroeconomic stability is also proposed by Vandemoortele (2010).

Social development and social cohesion can be conducive to economic growth. According to Foa (2011), the reasons for this include the reduction of transaction costs – for example, in the case of violent conflict between different sections of society, the costs will include policing, crime prevention and private security services. Because these costs may be such as to render economic transactions unprofitable at the margin, some deadweight loss will inevitably occur. In addition, social development and social cohesion facilitate collective action, and this may generate positive externalities arising from collective action in the form of providing, monitoring and enforcing the provision of necessary public goods such as infrastructure, schooling or health. In addition, and most of all, there is a high cost to intergroup violence as a result of capital disaccumulation caused by the destruction of physical infrastructure, and the ‘brain drain’ (loss of human capital).

Environmental management

‘Environmental management’ may be defined as institutions, regulation, practices and other processes conducive to environmental conservation, protection and use of natural resources. In order to achieve this aim, governments have to put in place appropriate legislative, judicial and educational systems and foster economic and social arrangements, which collectively can be called ‘environmental law and policy’.

The connection between environmental management and economic resilience can be explained in terms of the possible association between such management and the ability of an economy to recover, once hit by an external shock. The environment in many of its aspects is a public good and may generate negative externalities, which in turn are associated with market failure and therefore need to be regulated by the government or some other governance entity.

In addition, there is a clear connection between stability and environmental management through enforceable rules, economic instruments and education aimed at encouraging good environmental practices. This has specific connotations for economic resilience because, as argued in the section on macroeconomic stability, withstanding a downside external shock is likely to be more difficult under unstable conditions.¹⁶

Environmental management can also be connected with economic performance. According to the ECFIN (2004), the economy will function better when environmental regulation involves the definition and enforcement of property rights. Moreover, at the macro level, there may be economic gains due to growth of the eco-industry and the creation of green jobs, needed for environmental management. Furthermore, environmental governance may lead to the establishment of new markets for environmental technologies. These benefits are not always translated into increases in GDP, the indicator normally used to measure economic performance, as, for example, improved health and improved aesthetics are not included directly in the income flow, although these, nevertheless, have an economic value.¹⁷

Briguglio et al. (2009) did not include a component of environmental management in the resilience index that they computed, due to lack of data; however, they acknowledged that such management is an important contributor to economic resilience.

2.3.3 The resilience index¹⁸

The composite index proposed by Briguglio et al. (2009)

Using the indicators described in the previous section, with the exception of the environmental management index, Briguglio et al. (2009) constructed a resilience index for 86 countries. They used the max–min formula to rescale the variables and used a simple average to aggregate the scores. The authors found that countries with an advanced economy, notably the United States, Canada, Japan, Australia, New Zealand and a number of countries in Western Europe, registered high resilience scores. These countries have well-developed institutional economic, social and political structures and are countries where market forces predominate in resource allocation. There was a high degree of correlation between GDP per capita and countries' resilience scores.

Of interest is that a number of small states characterised by inherent high economic vulnerability registered relatively high resilience scores – a finding that the authors refer to in order to explain why small states can be economically successful in spite of (and not because of) their high exposure to economic shocks.

Net savings as a proxy for economic resilience

Another economic resilience index proposed by Baritto (2008) is based on net savings per capita in the countries examined. The author again defined economic resilience as the ability of a country to recover from shocks, but the author's focus was on the aftermath of a disaster. According to the author, net savings represent the available funds for a country to be invested in order to undertake the recovery of its capital stock. This approach implies that a country with low per capita net savings is less able to recover from a severe shock on its own than a country with high per capita net savings.

The author admitted this to be an indirect approach that should be considered only as a tentative estimate, but it has a number of advantages – including that it can easily be constructed using data available for a wide range of countries and that such data is updated regularly.

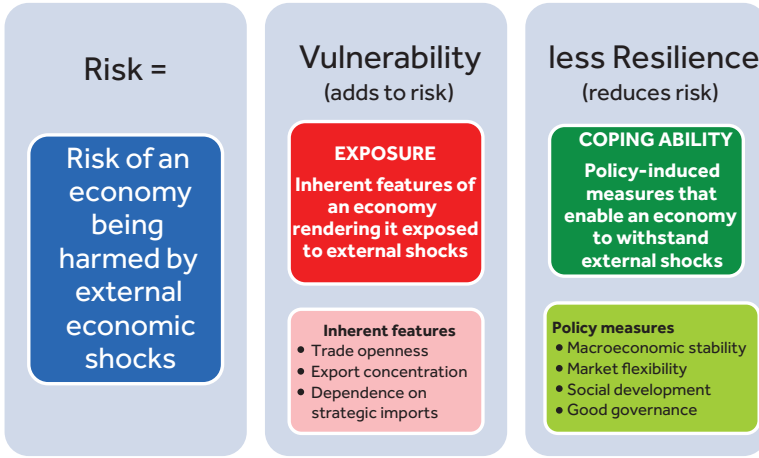
Baritto found that there was a close relationship between the resilience index constructed by Briguglio et al. (2009) and the per capita net savings as a proxy of resilience. The author contended that, although very different aspects are covered by those indicators, this relationship could be in part explained by the fact that both indices are strongly correlated with per capita income levels.

2.3.4 The vulnerability–resilience framework

By distinguishing between inherent economic vulnerability and nurtured economic resilience, Briguglio et al. (2009) created a methodological framework for assessing the risk of an economy being harmed by external shocks, as shown in Figure 2.1.

The figure shows that risk has two elements. The first is associated with vulnerability due to inherent conditions of an economy that is exposed to external shocks arising from trade openness, export concentration and dependence on strategic imports.

Figure 2.1 The risk of a country being harmed by external shocks



The second element is associated with policy measures leading to economic stability, market flexibility, social development and good governance.

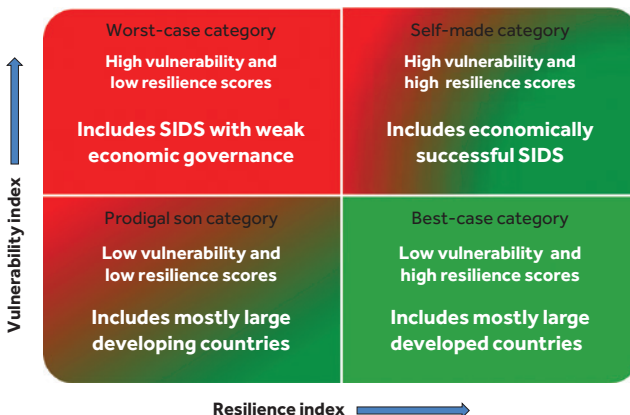
The risk of being adversely affected by external shocks is therefore the combination of the two elements, with the resilience element indicating that the risk would be reduced as resilience builds up.

By juxtaposing economic vulnerability and economic resilience, Briguglio et al. identified four possible scenarios into which countries may be placed according to their vulnerability and resilience characteristics, as shown in Figure 2.2. These four scenarios are termed ‘best case’, ‘worst case’, ‘self-made’ and ‘prodigal son’.

The best-case category applies to countries that are not inherently vulnerable and which, at the same time, adopt resilience-building policies.

The worst-case category refers to countries that compound the adverse effects of their inherent high vulnerability by adopting policies that run counter to economic resilience – and therefore exacerbate the effects of economic vulnerability. Highly vulnerable small states that are not well governed economically fall into this category.

Figure 2.2 The vulnerability/resilience nexus



Countries classified as ‘self-made’ are those with a high degree of inherent economic vulnerability, but which build up their economic resilience through the adoption of appropriate policies that enable them to cope with or withstand the effects of their inherent vulnerability. A number of small states – including Malta, Mauritius and Barbados – fall into this category.

Countries falling within the ‘prodigal son’ category are relatively large countries – and therefore with a relatively low degree of inherent economic vulnerability – that adopt policies deleterious to economic resilience, thereby exposing them to the adverse effects of shocks.

In Figure 2.2, the vertical axis measures inherent economic vulnerability and the horizontal axis measures nurtured resilience. Given that vulnerability refers to inherent characteristics that render countries prone to exogenous shocks, vulnerability scores for a particular country should not differ much over time. Therefore it is not expected that a country will move vertically along the quadrants of Figure 2.2, but horizontal movement is possible for those countries that adopt measures that build resilience and vice versa. It would thus be possible for countries to switch between the worst-case and the self-made scenarios, or the prodigal son and the best-case scenarios, through changes in their economic policies.

Briguglio et al. (2009) use the scores of the vulnerability index produced by Briguglio and Galea (2003) and the resilience index produced in that same study, to place different countries into the four scenarios described above. By and large, countries with scores falling in the best-case quadrant were mostly the large ‘developed countries’, countries with scores falling in the ‘self-made’ quadrant include a number of small states with high vulnerability scores, countries in the prodigal son quadrant include mostly large developing countries, and countries in the worst-case quadrant include vulnerable small countries with weak economic governance.

According to Briguglio et al., this method of defining vulnerability in terms of inherent features and defining resilience in terms of policy-induced changes has a number of advantages. First, the vulnerability index would refer to permanent (or quasi-permanent) features over which a country can exercise practically no control and which therefore cannot be attributed to inadequate policies. In other words, countries scoring highly on the index cannot be accused of inflicting vulnerability on themselves through misguided policy approaches. Second, the resilience index would refer to what a country can do to mitigate or exacerbate its inherent vulnerability. Third, the combination of the two indices would indicate the overall risk of being harmed by external shocks due to inherent vulnerability features, counterbalanced to different extents by policy measures.

2.4 A revised and updated vulnerability index

2.4.1 Added variables and extended discussion

The vulnerability and resilience framework proposed in this section draws on Briguglio et al. (2009) with some revisions, including that the study presented

in this chapter (a) covers many more small states; (b) includes an environmental management component¹⁹ in the resilience index; (c) utilises updated data; and (d) includes a financial risk indicator.

2.4.2 The components of the vulnerability index

The vulnerability index proposed in the study presented in this chapter has four components, namely (a) trade openness; (b) export concentration; (c) dependence on strategic imports; and (d) proneness to natural disasters.²⁰

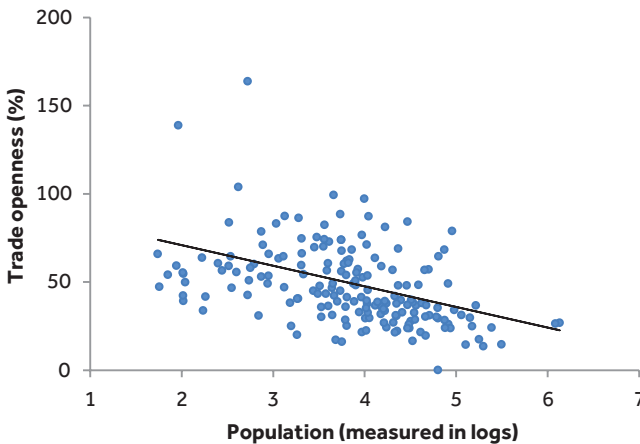
As already explained, the trade openness component is included in the economic vulnerability index on the assumption that, the higher the dependence of a country on international trade, the higher is the exposure to external economic shocks. This tendency is exacerbated when a country depends highly on a few export items. The 'dependence on strategic imports' variable is also included on the assumption that dependence on such products intensifies the exposure to external economic shocks arising from trade openness. The 'proneness to natural disasters' component is included because such disasters are also assumed to exacerbate the effects of external economic shocks and themselves lead to economic shocks.²¹

Measuring trade openness

In the study presented in this chapter, trade openness is measured by the average of exports and imports of goods and services as a percentage of GDP, averaged over three years (2009–2011). The sources of the data are presented in Appendix 2.1b(i) and its rescaled values are presented as Appendix 2.1a. As already explained, this indicator has been used in other vulnerability indices. In general, smaller countries tend to be more economically open than larger ones, as can be seen from Figure 2.3.

Figure 2.3 shows the relationship between population size of countries, measured in logs,²² and trade openness, which, as the fitted line shows, tends to be negatively related.²³ As already indicated, the main reason for this tendency is that these states

Figure 2.3 Trade openness (% , vertical axis) and country size



have a small domestic market and are therefore compelled to seek larger markets. In addition, their lack of natural resource endowments leads them to depend highly on imports.

Measuring export concentration

In the present study, export concentration is measured by the sum of the three broad groups of exports of goods and services, which together take the highest percentage of total exports of goods and services. This is then expressed as a percentage of total exports of goods and services. The procedure used is explained in Appendix 2.1b(ii). The variables were averaged over three years, 2009–11. The sources of the data are presented as Appendix 2.1b(ii) and its rescaled values in Appendix 2.1a. A similar indicator was used by Briguglio (1997) and Briguglio and Galea (2003), but this approach is not commonly used in vulnerability indices, as most studies utilise the merchandise export concentration index compiled by UNCTAD.²⁴ An important shortcoming of the UNCTAD index is that it covers merchandise only, whereas in reality export concentration can be in exports of services, such as tourism and financial services. This is especially important for small states.

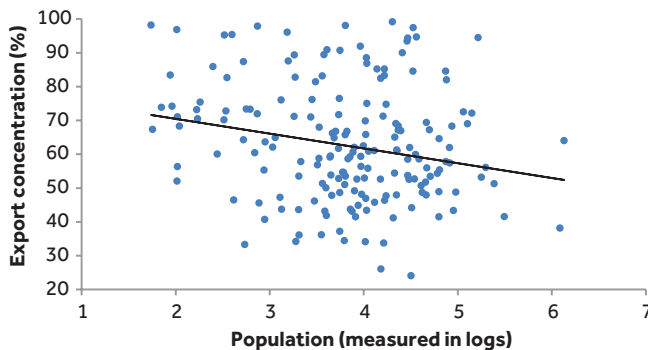
Figure 2.4 shows the relationship between country size, again measured by the log of the country populations and export concentration, measured as indicated above.

It can be seen from Figure 2.4 that export concentration and country size are negatively related, although here again there is considerable variation around the trend.²⁵

Measuring dependence on strategic imports

Strategic imports refer to essential products, which tend to be price and income inelastic; therefore demand for such products does not decrease enough to compensate for income decreases. There are obvious vulnerability connotations when a country depends heavily on imported energy sources for production and on imported food for consumption.

Figure 2.4 Export concentration and country size



For the purpose of the present study, this variable will be measured by the imports of food and fuel as a percentage of total merchandise imports. Figure 2.5 shows the relation between this variable and population size of countries measured in logs. The sources of the data are presented in Appendix 2.1b(iii) and its rescaled values in Appendix 2.1a.

The figure indicates that small countries tend to be more dependent on strategic imports than larger ones, although here again there are considerable variations around the fitted line.²⁶

Measuring proneness to natural disasters

An indicator capturing proneness to natural disasters has been used in various vulnerability indices, including Briguglio (1995) and Atkins et al. (2000). However, it has been left out in Briguglio and Galea (2003) and Briguglio (1997) on the grounds that it is not really an index of exposure to external economic shocks. On the other hand, it can be contended that natural disasters exacerbate the downside effects of external economic shocks and they do generate economic shocks themselves.

A commonly used source of data on such disasters is the EM-DAT database,²⁷ which was used in the study presented in this chapter, utilising the indicator relating to damage caused by disasters as a percentage of GDP over a period of about three decades (1980 to 2012). The relevant data is presented as Appendix 2.1a. Figure 2.6 shows that there is a negative relationship between the economic damage of natural disasters (on the vertical axis) and country size, measured by the log of the population (on the horizontal axis).²⁸

The diagram shows that many countries experienced no or negligible natural disasters, and that the greatest extent of damage tended to occur in small states. The greatest damage during the period under consideration occurred in Samoa. Other small island states that experienced a relatively high degree of damage were St Lucia, St Kitts and Nevis, Haiti, Grenada, Vanuatu, Dominica, and Antigua and Barbuda.

Figure 2.5 Dependence on strategic imports and country size

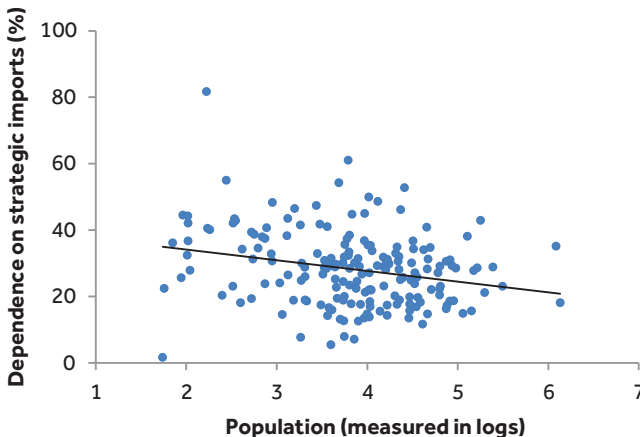
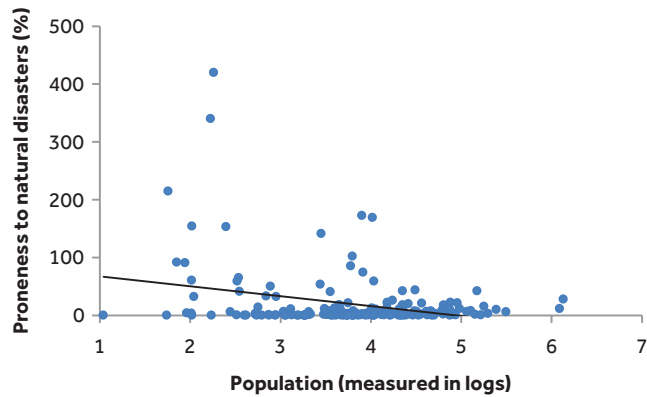


Figure 2.6 Proneness to natural disasters and country size



Other possible components of the EVI

As indicated in the discussion on vulnerability indicators, there are many other variables that were used to construct an economic vulnerability index. As argued, the authors have utilised only variables that reflect permanent or quasi-permanent features of an economy that render it exposed to external shocks.²⁹

2.4.3 Constructing a vulnerability index

The data relating to the four components of the vulnerability index were rescaled using the max–min formula, as presented in Appendix 2.1, which also gives the sources of the data. Figure 2.7 summarises the weighting scheme of each component of the index, where, as can be seen, a 25 per cent weight is assigned to the four components described above.³⁰

Figure 2.8 shows the relationship between the scores of the vulnerability index (on the vertical axis) and country size, measured in terms of the log of the population size

Figure 2.7 Components and weighting scheme of the economic vulnerability index

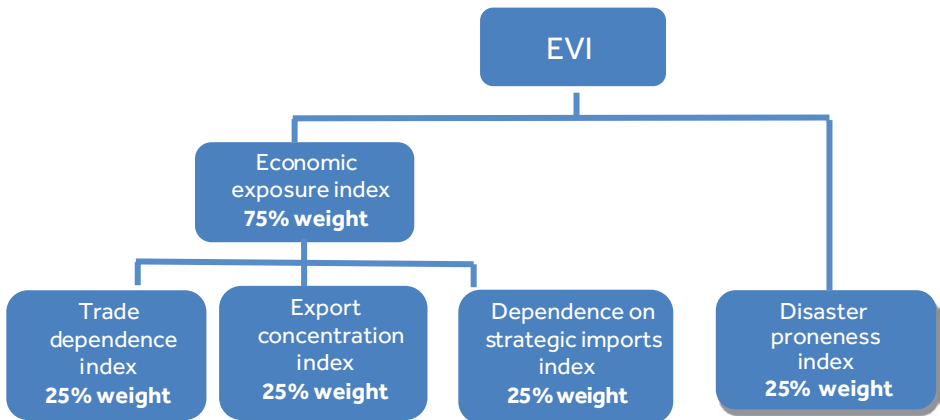
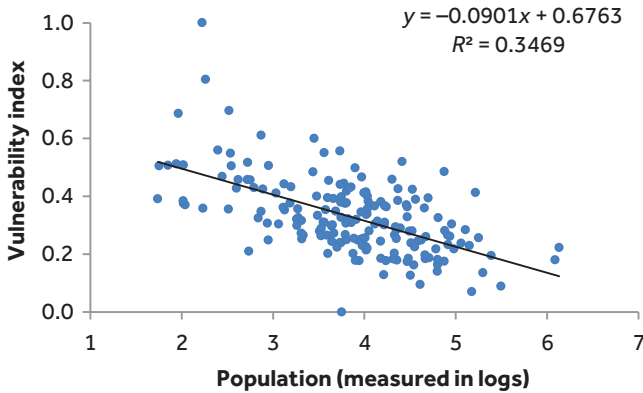


Figure 2.8 The vulnerability index and country size

(on the horizontal axis).³¹ As can be seen from the diagram, there is a clear negative relationship between the two variables, although there is considerable variation around the fitted line.³²

This tendency can also be observed from the data presented in Appendix 2.1, where the majority of highly economically vulnerable countries are small island states, with relatively high scores with respect to all or most components of the vulnerability index. Conversely, the least vulnerable countries are mostly large ones, with relatively low scores with respect to all or most components of the vulnerability index.³³

2.5 A revised and updated resilience index

2.5.1 The components of the resilience index

The resilience index proposed in this chapter has five components, namely (a) macroeconomic stability; (b) market flexibility (adjusted for financial riskiness); (c) political governance and institutions; (d) social development; and (e) environmental management.

It should be noted that the resilience index proposed here, unlike the resilience index developed by Briguglio et al. (2009), will contain an environmental management component. In addition, the market flexibility component of the index this time will include considerations relating to financial riskiness.

2.5.2 Measuring macroeconomic stability

Policy-induced variables associated with macroeconomic stability

For the purpose of the study presented in this chapter, the macroeconomic stability component of the resilience index will consist of the following three components:

- *Government debt as a ratio of GDP.* This variable captures instability in government finances through cumulative fiscal deficits. As explained above, this variable was also used by Briguglio et al. (2009),³⁴ who argued that it is associated with resilience because a country with a low level of debt may find it easier to

mobilise resources in order to offset the effects of external shocks. Thus, this variable would indicate resilience of a shock-counteracting nature.

- *Inflation.* This variable can be measured by either consumer prices (such as the retail price index) or the GDP deflator. In this study the GDP deflator was used, as it was considered more appropriate than a consumer price index to capture the incidence of excess demand or supply in the macroeconomy, given that the former index excludes imported inflation. Inflation provides additional information to that contained in the government debt variable because it is strongly influenced by other types of economic policy, including monetary policy. This variable is associated with resilience because, if an economy already has high levels of inflation, it will have limited room for manoeuvre in the event of an adverse external shock.
- *Deficits on current account of the balance of payments as a ratio of GDP.* This variable measures imbalances in external transactions. It also relates to domestic savings³⁵ and changes in external reserves.³⁶ It is associated with resilience because, if an economy is suffering from chronic current account deficits, it will not have room for manoeuvre in the face of adverse shocks.³⁷ This variable was not included in the resilience study of Briguglio et al. (2009), but was included by Briguglio and Piccinino (2012) in a study of resilience in East Asia.

These variables are measured as an average over a ten-year period (2003–12), to reduce as much as possible the effects of cyclical fluctuations. The data for these three variables were derived from the IMF's World Economic Outlook Database³⁸ and the way they were measured is explained in Appendix 2.2b(i). To obtain the 'macroeconomic stability' index, its components were rescaled using the max–min formula.

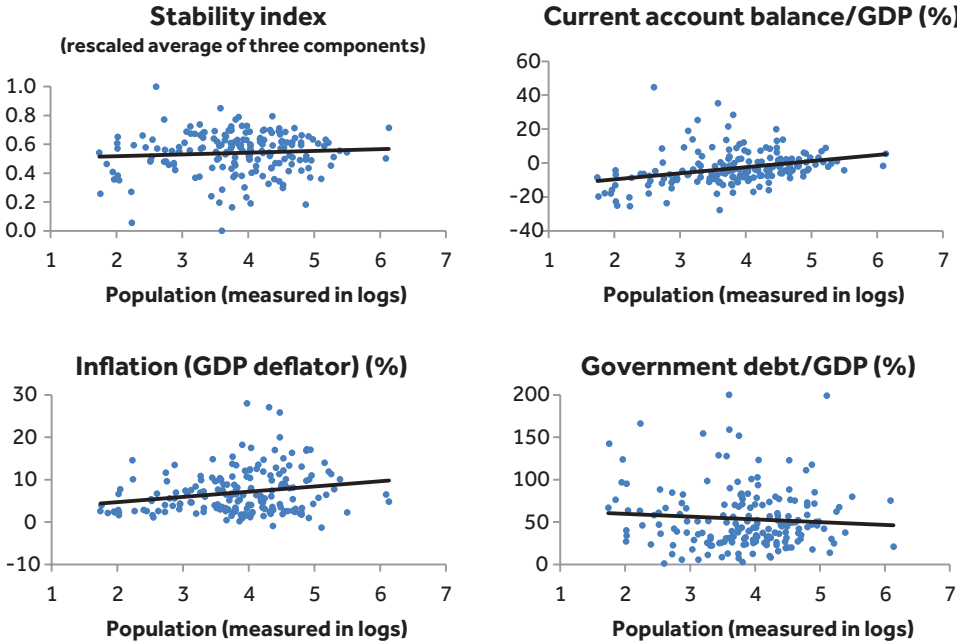
Figure 2.9 shows the relationship between the 'macroeconomic stability' index and its components (on the vertical axis) and country size, measured by the log of the population (on the horizontal axis). To obtain the 'macroeconomic stability' index, its components were rescaled using the max–min formula.

It can be seen from the fitted lines that (a) the incidence and magnitude of current account deficits (negative values) tend to be higher in smaller states; (b) inflation tends to be lower in smaller states; (c) debt tends to be higher in smaller states; and (d) the 'macroeconomic stability' index, which comprises the aforementioned three indices, shows a slight tendency to increase with changes in the size of countries, as indicated by the fitted line.³⁹ However, here again there are considerable variations around the fitted line, with smaller and larger states both registering high and low degrees of instability.

2.5.3 Measuring market flexibility

Economic Freedom of the World Index

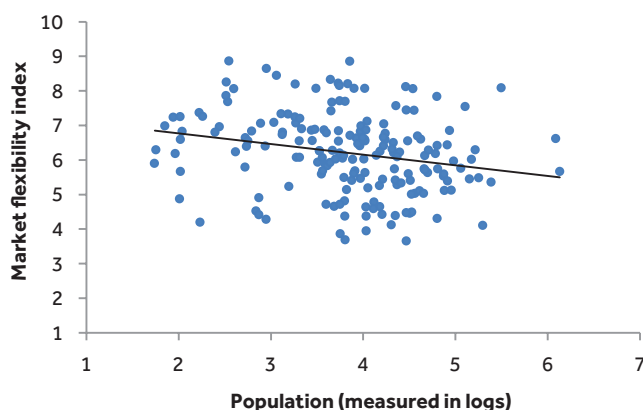
Indicators of market flexibility that span a sufficiently wide range of countries – as required for the purpose of the study presented in this chapter – are not readily

Figure 2.9 The stability index and its components against country size

available. Following a search for suitable indicators, it was decided to use the two indices from the fifth component of the Economic Freedom of the World index (EFWI), titled 'Regulation', which measures the extent to which markets operate freely, competitively and efficiently across countries.⁴⁰ It is designed to identify the effect of regulatory restraints and bureaucratic procedures on competition and the operation of markets. Each component and subcomponent of the EFW Index is measured on a scale ranging from 0 to 10, reflecting the distribution of the underlying data.

The 'regulation' major area of the EFWI has three components and various subcomponents. The three main components are (i) credit market regulations; (ii) labour market regulations; and (iii) business regulations (Gwartney et al. 2013).⁴¹ For the purpose of the 'market flexibility' index the authors use the second and third components. An indicator relating to the financial market will also be used, as explained in the next subsection.

In the case of the labour market component of the EFWI,⁴² inflexibility relates to market interference such as that related to unduly high unemployment benefits (which could undermine the incentive to accept employment), dismissal regulations, minimum wage impositions, centralised wage setting, extensions of union contracts to non-participating parties and conscription. All these are viewed as possibly precluding work effort, thereby limiting the ability of a country to recover from adverse shocks. In the present study, a country would have a higher market flexibility score if it allowed market forces to determine wages and establish conditions of dismissal, and refrained from the use of conscription.

Figure 2.10 Market flexibility index and country size

The ‘business regulations’ index⁴³ relates to bureaucratic control of business activities, which is also thought to inhibit market flexibility. This subcomponent is designed to identify the extent to which bureaucratic procedures limit competition and the operation of markets. When such activities retard entry into business and increase the cost of production, when prices are not market determined, and when governments use their power to extract financial payments and reward some businesses at the expense of others, private sector involvement is discouraged, thereby inhibiting the capacity of freely operating markets to absorb shocks.

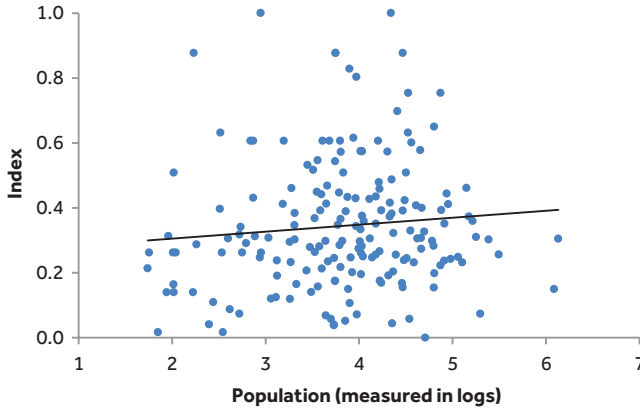
The ‘market flexibility’ index is obtained by combining the ‘labour market regulations’ index and the ‘business regulations’ index, for the years 2009–2011, covering 152 countries. The result indicates that a number of smaller states are among the top ten least regulated countries, including Hong Kong, Singapore, The Bahamas and Bahrain. However, there are some small states that are heavily regulated.

The EFWI leaves out a number of small states, and this renders it somewhat deficient for the purpose of the study presented in this chapter.⁴⁴ The missing country data were filled in by resorting to the World Bank’s Doing Business Index (DBI), given that the EFWI draws heavily on the DBI. The procedure for obtaining the missing data is explained in Appendix 2.2b(ii). The resulting ‘market flexibility’ index is presented in Appendix 2.2a.

Figure 2.10 shows the relationship between the ‘market flexibility’ index plotted against country size, measured by the log of the population (on the horizontal axis). It can be seen that there is a slight tendency for small states to have more flexible markets, as indicated by the fitted line, although, as in the case of other resilience variables considered in this study, the correlation is very weak.⁴⁵

Financial riskiness index

As explained above, the free market has been associated with excessive riskiness in the financial markets – and this has negative resilience implications. For this reason it was decided to combine the ‘market flexibility’ index, which relates to the market for labour

Figure 2.11 Lack of financial prudence index and country size

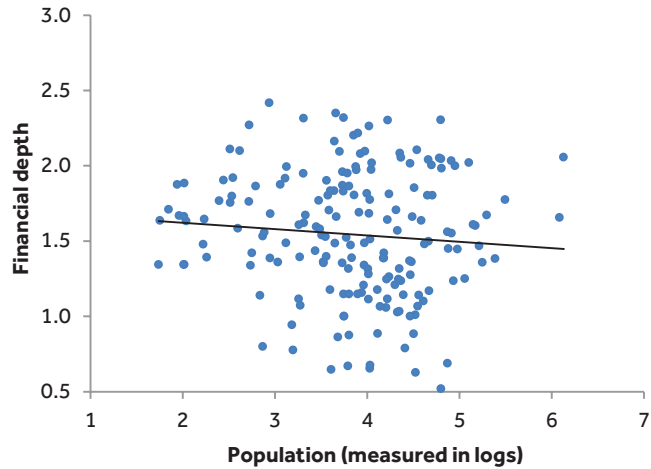
and goods, with a 'financial riskiness' index, the latter consisting of two components, namely (i) 'lack of financial prudence' weighted by (ii) the 'importance of the financial sector'. The assumption here is that, if we take two countries with an equally high 'lack of financial prudence' score but the first has a larger financial sector than the second, the problem will be higher in the first country than in the second.

To measure 'lack of financial prudence' it was deemed appropriate to derive the information from two indices utilised in the Global Competitiveness Indicators (Schwab 2013) titled 'soundness of banks' and 'regulation of securities exchanges', suitably adjusted and rescaled using the max-min procedure. The method used for this purpose is explained in Appendix 2.2b(iii). This index again leaves out a number of small states from its coverage. The missing country data were obtained from the World Bank's 'strength of legal rights' index, which has an extensive country coverage.⁴⁶ The procedure used for this purpose is again explained in Appendix 2.2b(iii) and the resultant 'lack financial prudence' index is presented as Appendix 2.2a. The relation between 'lack of financial prudence' and country size is shown in Figure 2.11, which suggests that small states as a group tend to be more financially prudent than larger states, but the correlation coefficient, here again, is very low.⁴⁷

As already explained, the 'lack financial prudence' index was weighted by another index that measures the 'depth of the financial sector' in an economy. Here again it was found somewhat difficult to identify an index that exactly fits this purpose. The best available index in this regard, with sufficient 'small state' coverage, was the 'bank private credit to GDP (%)' index, which relates to the financial resources provided to the private sector by domestic banks and other financial institutions. According to the World Bank (2012, 23), this index provides a good estimate of the depth of the financial sector. Appendix 2.2b(iii) presents an explanation of how the 'financial depth' index was constructed.

The correlation between financial depth and country size, shown in Figure 2.12, indicates that the correlation between the two variables is very weak, suggesting that there is no statistical evidence that small states differ significantly from larger states with regard to financial depth.⁴⁸

Figure 2.12 Financial depth and country size

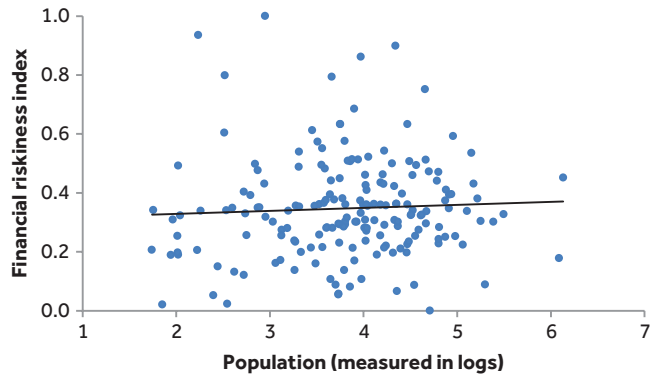


The ‘lack of financial prudence’ and ‘financial depth’ indices were combined to construct a ‘financial riskiness’ index. This index is presented as Appendix 2.2a. It should be noted that these two indices together are intended to measure confidence (or lack of it) in the financial sector and the importance of this sector, which are desirable attributes for assessing resilience, as suggested by Ocampo (2008).

Figure 2.13 shows the relation between the financial riskiness index, rescaled using the max–min formula, and country size, measured by the log of the population (on the horizontal axis).

It can be seen that the fitted line is almost horizontal,⁴⁹ indicating that financial riskiness is not significantly associated with country size, the reason being that, as shown, larger countries as a group tend to lack of financial prudence to a higher degree than smaller countries, but small countries tend to have a larger financial sector. However, there are wide variations around the trend, and individual countries within each group have their own particular circumstances.

Figure 2.13 Financial riskiness index and country size



As can be seen, the construction of the ‘financial riskiness’ index required a somewhat complicated procedure, and the validity of this index is likely to be questioned as a result of the manner in which the missing data was estimated. However, the alternative approach was to leave out this index, which was not considered desirable given the lessons learned from recent developments in global financial markets. The main message that the authors intend to convey by this index is that riskiness is often ‘perceived’ and a perception index, such as the one used in this study, is therefore appropriate. In addition, such risk is heightened as the financial sector increases in importance.

The ‘adjusted’ market flexibility index

The ‘adjusted market flexibility’ index is a combination of (a) the ‘market flexibility’ index in the labour and goods markets (MFX) and (b) the ‘financial safety index’ measured as 1-FNR, which is the obverse of the ‘financial riskiness’ index.⁵⁰ Following due consideration, it was decided to construct the ‘adjusted market flexibility index’ by assigning 75 per cent weight to ‘market flexibility’ and 25 per cent weight to ‘financial safety’. The resultant data are presented in Appendix 2.2.⁵¹

Figure 2.14 shows the relationship between the ‘adjusted market flexibility’ index (rescaled using the max–min procedure, on the vertical axis) and country size, measured by the log of the population (on the horizontal axis).

It can be seen that there is a tendency for small economies to be more flexible than larger countries after adjusting for financial riskiness, although here again the correlation is weak.⁵² This indicates that there are many exceptions, with a number of small states registering low flexibility scores and a number of large states registering high flexibility scores.

2.5.4 Measuring political governance

The Worldwide Governance Indicators

In order to measure political governance, which, as argued above, is an important requisite for resilience building, the present study utilises the Worldwide Governance Indicators (WGI).⁵³ These indicators have six dimensions of governance, namely (i) voice and accountability; (ii) political stability and absence of violence;

Figure 2.14 ‘Adjusted’ market flexibility index and country size

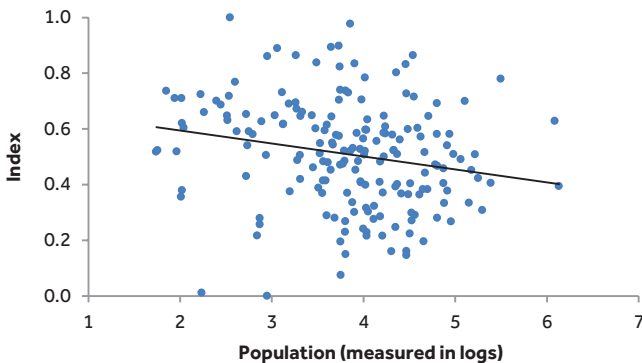
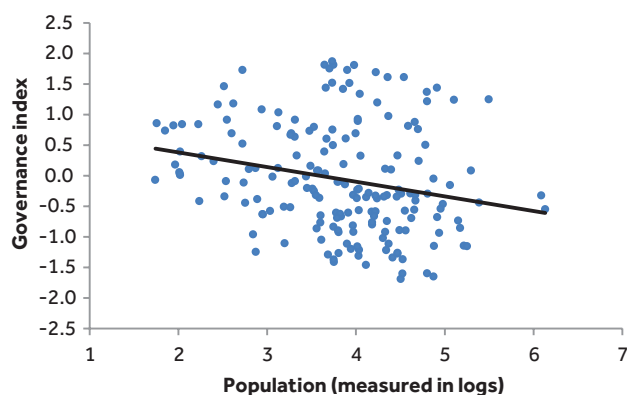


Figure 2.15 Political governance index and country size

(iii) government effectiveness; (iv) regulatory quality; (v) rule of law; and (vi) control of corruption. The indicators are based on the views of persons involved in business, ordinary citizens and expert surveys, with sources derived from various institutes, think tanks, non-governmental organisations, international organisations and private sector firms. The data was rescaled using the max–min approach to render the data comparable across sources. A detailed description of the methodology is given by Kaufmann et al. (2010). The data used for the purpose of the present study was averaged over the six dimensions of the WGI indicators and again averaged over three years (2009, 2010 and 2011). The data relating to the WGI and the data sources are presented in Appendix 2.2a.

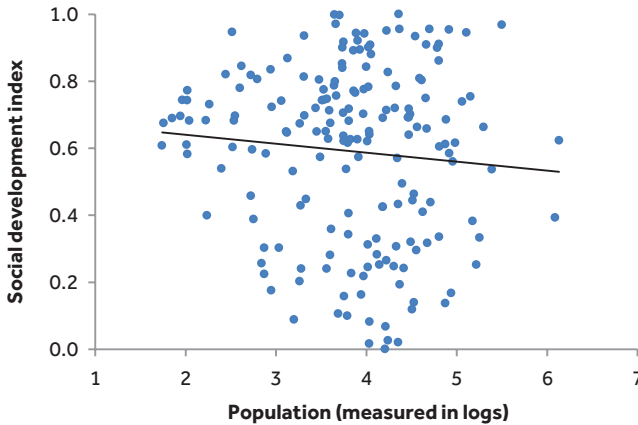
Figure 2.15 shows the relationship between the scores of the components of the WGI (on the vertical axis), ranging from –2.5 (worst governance score) to +2.5 (best governance score) and country size (on the horizontal axis), measured by the log of the population.

The fitted line indicates that there is a tendency for small states to register higher governance scores than large countries, but here again the highly dispersed scatter markers indicate that the correlation is poor.⁵⁴

2.5.5 Measuring social development

The social components of the Human Development Index (HDI)

The study presented in this chapter utilises the non-income components of the Human Development Index as an indicator of social development.⁵⁵ The HDI is a widely used index, having the advantage of covering a large number of countries. Its non-income components relate to education and health. Education is measured by (a) mean years of schooling⁵⁶ and (b) expected years of schooling,⁵⁷ while health is measured by life expectancy at birth.⁵⁸ These indicators measure the countries' average achievement in terms of these important social features. The resilience index produced by Briguglio et al. (2009) utilised these two indices as indicators of social development, as this was considered superior to other social indices, as explained below.

Figure 2.16 Social development index and country size

The data relating to the social components of the HDI and the sources of the data are presented in Appendix 2.2a and 2.2b(vi). Figure 2.16 shows the relationship between the rescaled scores of the non-income components of the HDI (on the vertical axis) and country size, measured by the log of the population (on the horizontal axis).

It can be seen that there is a tendency for small states to register higher scores than larger states, but the correlation is very low, as evidenced by the spread of the scatter markers around the fitted line.⁵⁹

2.5.6 Measuring environmental management

Environmental indicators

In order to cater for environmental governance in the economic resilience index, it is important to distinguish between the different objectives of environmental indicators. Some sets of indicators are intended to capture the state of the environment, including natural and inherent features, such as earthquakes, volcanoes, droughts and floods. These are referred to as ‘state’ indicators, as their focus is on the condition of the environment. Other indicators measure anthropogenic pressures, such as industrial pollution. Still other indicators refer to policy responses to the state of the environment and anthropogenic pressure. For the purpose of this study, the relevant indicators are those associated with policy responses that are conducive to environmental governance.

The environmental performance index

This study utilises the environmental performance index (EPI) as an indicator of environmental governance.⁶⁰ The EPI attempts to quantify and numerically benchmark the environmental performance of a country’s policies. Each component of the EPI represents policy categories, each of which is assigned a weight in order to construct an aggregate score. According to the information given in the EPI website,⁶¹ the weightings at all levels of aggregation take into consideration the underlying

variability in the data, the quality of the datasets and current policy priorities, to produce a balanced EPI score, based on expert judgement.⁶²

The 2012 EPI ranks 132 countries in the following ten policy categories: (a) environmental burden of disease; (b) water (effects on human health); (c) air pollution (effects on human health); (d) air pollution (ecosystem effects); (e) water resources (ecosystem effects); (f) biodiversity and habitat; (g) forests; (h) fisheries; (i) agriculture; and (j) climate change. These policy categories were grouped into two broad policy objectives, namely (i) environmental health (EH), which measures environmental stresses to human health, covering the first three policy categories; and (ii) ecosystem vitality (EV), which measures ecosystem health and natural resource management, covering the remaining seven policy categories. The EH objective was given a weight of 30 per cent, while the EV objective was given a weight of 70 per cent. These policy objectives and categories are further subdivided into 22 performance indicators. The EPI website presents a detailed description of each indicator used in the EPI.⁶³

Choice of the EPI as the environmental indicator for the resilience index

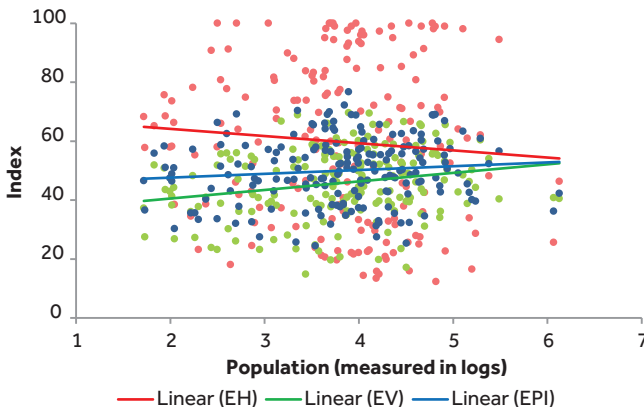
The only set of indicators that is highly focused on environmental governance and that has recently been updated is the environmental health index of the EPI. However, the index does not have a sufficiently good coverage of small states. Nonetheless, the authors decided to still use this index, by extrapolating the existing data to derive values for missing country data.

The following method was used to fill the data gaps:

- (a) A 'least squares' multiple regression procedure were used to determine what explanatory variables systematically affected the 'environmental health' (EH) index for the countries for which data for this index was available. It was ensured that these explanatory variables were also available for all countries, including those with missing EH scores. The estimated coefficients were then used to estimate the EH index for the countries with missing data, using the mentioned explanatory variables.
- (b) The same procedure was applied to estimate the 'ecosystem vitality' (EV) index for the countries with missing data.
- (c) The estimates of EPI for the countries with missing data were obtained by weighting the estimated EH by 0.3 and the estimated EV by 0.7, the method used by the authors of the EPI index.

The procedure for estimating the missing data is further explained in Appendix 2.2b(vii) and the results are presented in Appendix 2.2a. Figure 2.17 shows the relationship between the scores of the EH, EV and EPI indices (on the vertical axis) against country size, measured by the log of the population (on the horizontal axis).

It can be seen from Figure 2.17 that small states, compared with larger countries, tend to have higher scores for the EH index, which measures environmental stresses to human health. On the other hand, the fitted line of the EV index, which measures ecosystem health and natural resource management, slopes in the opposite direction,

Figure 2.17 Environmental performance index and country size

indicating that small states tend to have weaker natural resources management than larger ones.

The EPI, which is a weighted average of the EH and EV indices, also slopes upwards, being mostly influenced by the EV index with a weight of 70 per cent, suggesting that environmental performance tends to be better in larger countries, although the slope is very low and almost horizontal. Again the scatter markers indicate that the correlation is weak.⁶⁴

2.5.7 Resilience index components

The five variables discussed above were grouped into three components of the resilience index, as follows:

- (i) macroeconomic stability;
- (ii) market flexibility, adjusted for excessive financial risks; and
- (iii) governance, consisting of political governance, social development and environmental management (the reason these three aspects of governance were grouped together is that there is likely to be a degree of overlap between these indicators).

Figure 2.18 shows the organisation of the index and the weighting scheme.⁶⁵

2.5.8 Economic resilience index (ERI)

The scores of the composite resilience index are presented in Appendix 2.2b(viii) and will be discussed further below. Here the authors only describe general tendencies with regard to the relationship between the ERI and country size, as shown in Figure 2.19.

It can be seen that there is a tendency for smaller states to exhibit a higher degree of economic resilience than larger states. However, this need not imply that there is causality between size of countries and resilience, given the extremely low correlation

Figure 2.18 The components and weighting scheme of the environmental resilience index (ERI)

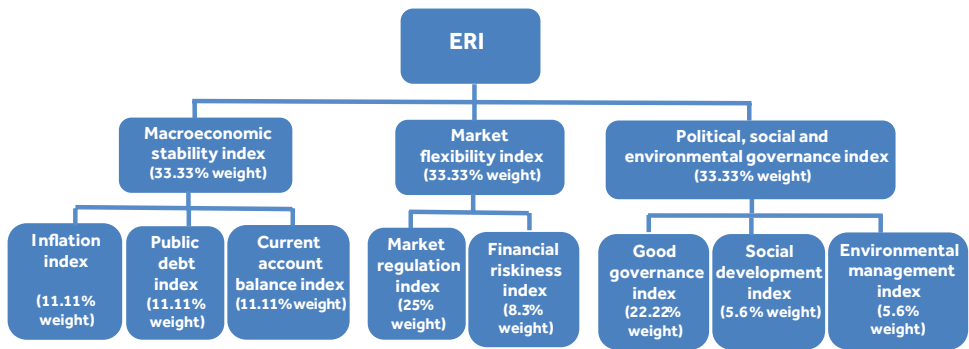
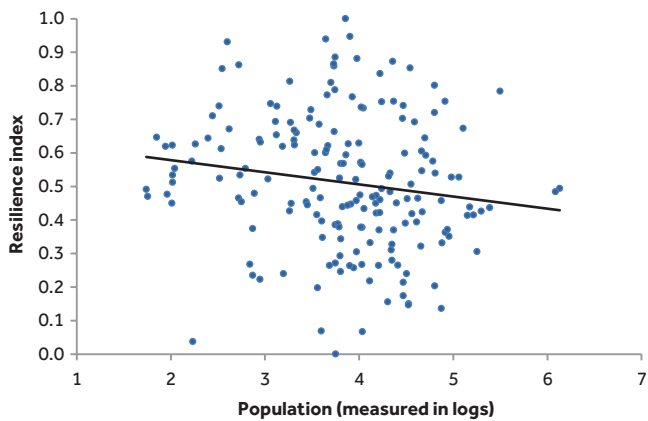


Figure 2.19 The economic resilience index and country size



coefficient. There is, however, a high degree of correlation between the ERI and GDP per capita.⁶⁶ This would seem to indicate that the most resilient countries tend to be economically developed ones. Most developing countries are relatively large ones and this may explain the backward bending line of Figure 2.19.

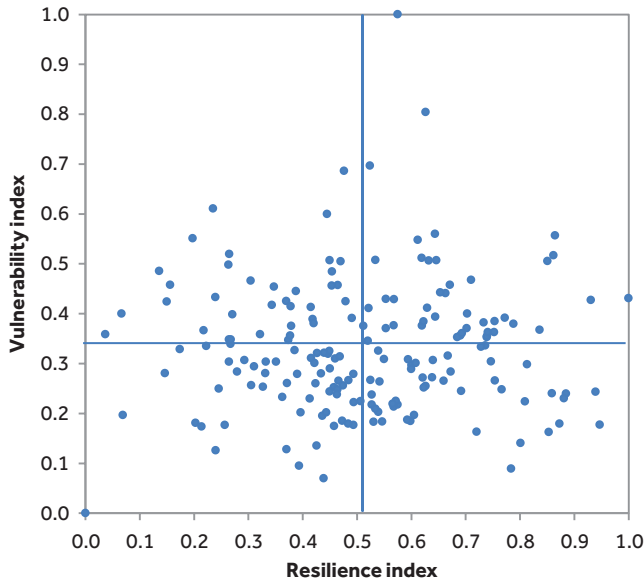
2.6 The revised vulnerability/resilience framework

2.6.1 Juxtaposing vulnerability and resilience

The resilience index and the vulnerability index were rescaled again using the max-min formula and juxtaposed, to classify countries in terms of the two indices, and to populate the vulnerability and resilience nexus diagram, shown in Figure 2.3 above.

It can be seen that the country scores, represented by the blue markers in Figure 2.20, occupy the four quadrants of the diagram, with countries registering varying vulnerability and resilience scores. The boundaries of the quadrants were set as the average score of each of the two indices.⁶⁷ However, as will be explained below, there are many borderline cases.

Figure 2.20 The vulnerability and resilience scores, juxtaposed



2.6.2 Country comparisons

The countries covered by the EVI and ERI can be grouped into four categories, as shown in Table 2.1. This table can be considered as the hypotheses to be tested by the results of classification of countries, based on the vulnerability and resilience indices computed for the purpose of the study presented in this chapter.

The actual names of the 183 countries in each category, based on the vulnerability and resilience indices developed in the present study, are listed in Table 2.2.⁶⁸

Generally speaking, the countries shown in the first and third column of Table 2.2 correspond with the expected classification hypothesised in Table 2.1. However, there are a few exceptions. There are a few larger states included in the high-vulnerability and low-resilience category, namely Iraq, Libya, Nigeria, Tajikistan, Turkmenistan and Ukraine, characterised by relatively high export concentration. The high resilience and high vulnerability category, which was expected to include small,

Table 2.1 Expected type of countries in the four categories

Category of countries		Expected type of countries in this category
Vulnerability score	Resilience score	
Low	High	Large developed countries with good economic governance
Low	Low	Large developing countries with weak economic governance
High	High	Small states with good economic governance
High	Low	Small states with weak economic governance

well-governed states, includes Chile, Korea, Hungary and Saudi Arabia, which also registered relatively high scores in export concentration or openness.

It should be noted here that there was a degree of subjectivity in the classification of countries in the borderline cases. The countries were placed in that category after examining their 'economic resilience' score. For example, the countries in the second cell of the top row of Table 2.2 registered higher resilience scores than those in the first cell of the same row. Likewise, the countries in the second group of the lower row of Table 2.2 registered higher resilience scores than those in the first cell of the same row.

The classification of countries in Table 2.2 is best viewed as providing general tendencies, in line with the hypotheses presented in Table 2.1, which, as already noted, are by and large confirmed on the basis of available data.

The country classification depends on the underpinning assumptions

The classification of countries shown in Table 2.2 depended highly on many underpinning assumptions, including those relating to the validity of published data and their comparability across countries; the definitions and the measurement of the components; the weighting schemes; and the thresholds used for the four country categories. It is likely that alternative assumptions would yield alternative classifications. However, as stated, the methods proposed in the present study would seem to by and large support the hypothesis presented in Table 2.1.

2.7 Policy implications

2.7.1 Uses of the vulnerability and resilience indices

The vulnerability and resilience indices developed in this study, and their juxtaposition, may be useful to support decision-making in small states, especially for setting directions and justifying choice of priorities for resilience building. In particular, the analysis could help to:

- disseminate information on and draw attention to issues relating to resilience building;
- encourage quantitative estimations of resilience building; and
- promote the idea of integrated action.

Dissemination information

An index is a good instrument for drawing attention to an issue being investigated. Thus, for example, the exercise of computing an index of resilience may itself make decision-makers and stakeholders more aware of the factors that lead to resilience building. Such an exercise may also generate academic discussion and enhance awareness among scholars and practitioners on the issues involved.

The vulnerability/resilience (V&R) framework proposed by Briguglio et al. (2009) did generate considerable interest among small states and international organisations working in the interests of small states. This framework was used by

Table 2.2 Countries classified according to the vulnerability and resilience nexus

High vulnerability and low resilience			Borderline cases: high vulnerability and medium resilience		High vulnerability and high resilience	
Algeria	Haiti		Azerbaijan	Marshall Islands	Antigua/Barbuda	Korea
Angola	Iraq		Cape Verde	Montenegro	The Bahamas	Kuwait
Belarus	Libya		Grenada	Papua New Guinea	Barbados	Lithuania
Bhutan	Mauritania		Guyana	St Kitts & Nevis	Belgium	Luxembourg
Bolivia	Micronesia		Jamaica	St Vincent/Grenadines	Belize	Malaysia
Central African Rep.	Mongolia		Jordan	Seychelles	Botswana	Malta
Chad	Nicaragua		Kiribati	Swaziland	Brunei Darussalam	Mauritius
Comoros	Nigeria		Maldives		Chile	Netherlands
Congo, Dem. Rep.	São Tomé/Príncipe				Czech Republic	Oman
Congo, Republic	Sierra Leone				Dominica	St Lucia
Côte d'Ivoire	Solomon Islands				Estonia	Samoa
Djibouti	Tajikistan				Fiji	Saudi Arabia
Ecuador	Turkmenistan				Gabon	Singapore
Equatorial Guinea	Ukraine				Hong Kong	Slovak Republic
Guinea	Yemen				Hungary	Taiwan
Guinea-Bissau	Zimbabwe				Iceland	Tonga
					Ireland	Trinidad/Tobago
						UAR
						Vanuatu

(continued)

Table 2.2 Countries classified according to the vulnerability and resilience nexus (continued)

Low vulnerability and low resilience		Borderline cases: low vulnerability and medium resilience	Low vulnerability and high resilience	
Afghanistan	Liberia	Albania	Kenya	Australia
Argentina	Moldova	Armenia	Latvia	Austria
Brazil	Mozambique	Bangladesh	Lesotho	Bahrain
Burundi	Myanmar	Benin	Macedonia, FYR	Canada
Egypt	Nepal	Bosnia & Herz.	Mexico	Denmark
Eritrea	Niger	Bulgaria	Morocco	Finland
Ethiopia	Pakistan	Burkina Faso	Namibia	France
Gambia	Russia	Cambodia	Panama	Germany
Iran	Senegal	Cameroon	Paraguay	Japan
Kyrgyz Republic	Sudan	China	Peru	
Lao, PDR	Syria	Colombia	Philippines	
Lebanon	Tanzania	Costa Rica	Portugal	
Liberia	Togo	Croatia	Romania	
Madagascar	Uzbekistan	Cyprus	Rwanda	
Malawi	Venezuela	Dominican Rep.	Serbia	
Mali	Vietnam	El Salvador	South Africa	
		Georgia	Spain	
		Ghana	Sri Lanka	
		Greece	Suriname	
		Guatemala	Thailand	
		Honduras	Tunisia	
		India	Turkey	
		Indonesia	Uganda	
		Israel	Uruguay	
		Italy	Zambia	
		Kazakhstan		

the Commonwealth Secretariat to conduct V&R profiling on the ground in three small island states, namely Seychelles, St Lucia and Vanuatu, as explained in the book by Briguglio et al. (2010). These assessments were conducted so the small states involved could understand the factors that lead to their economic vulnerability and to identify priority areas for economic policy-making, to cope better with vulnerability and boost resilience.⁶⁹

The V&R framework was also referred to in the report of the UN Secretary-General,⁷⁰ on the occasion of the five-year review of the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States.

The UN Economic and Social Commission for Asia and the Pacific (ESCAP) et al. (2010) sought to assess the impact of the global financial crisis by developing a vulnerability index, which is a composite indicator that measures a country's exposure to the global economic crisis and the country's coping capacity to mitigate the crisis. In Appendix 3 of their report, ESCAP et al. acknowledge that their approach was inspired by the work of Briguglio et al. (2009).

UNDESA, in preparation for the Third International Conference on SIDS in Samoa in 2014, has also embarked on developing a vulnerability and resilience framework, similar to the approach pioneered by Briguglio et al. (2009). According to the UNDESA website, this exercise was piloted in seven SIDS: two in the Caribbean (Jamaica, Barbados), three in the Indian Ocean (Comoros, Mauritius, Seychelles) and two (Tonga, Vanuatu) in the Pacific from September 2013 to April 2014.⁷¹ The objective of this exercise was to test the framework methodology in practice and to incorporate the lessons and best practices from the pilot projects into further refinement and development of the framework.

Encouraging quantitative estimation of resilience building

The quantitative estimation of the indices developed in this study can help small states to develop a common language for discussion on vulnerability and resilience. One often finds that parties engaged in debate disagree because of a lack of common definitions.

In the case of the vulnerability and resilience indices, the quantification of the components required careful definitions, and this could help focus the discussion on matters directly relevant to the issues under consideration. This is because quantifying variables, though taxing and not always possible, compels the researcher to concentrate on relevant, well-defined indicators. As is evident in the above discussion, the present author has been at pains to assign a precise definition to the variables and to choose an appropriate index that matches the definitions.

Promoting the idea of integrated action

Although a composite index yields a single-value measure of the phenomena under consideration, it summarises complex realities and therefore conveys the message that the issue under investigation is not the outcome of a single factor. This could help

to foster an awareness of the interconnections between the components of the index. In the case of economic resilience, for example, it is often not enough – and may even be counterproductive – to take action in one area in isolation from others.

The resilience index proposed here could therefore promote the need for integrated action and give a high profile to certain policies that can strengthen resilience. In this regard, the index can be useful for communication and to alert stakeholders about failures and success stories relating to the components of the resilience index.

2.7.2 Policy implications at the national level

Embedding the resilience framework into national strategies

As explained above, small states have specific characteristics that render them particularly exposed to external economic shocks. This means that economic changes in these states depend to a large extent on factors outside their control. In a globalised world, all countries are to an extent influenced by external forces, but small states are especially vulnerable in this regard. Resilience building is therefore of particular relevance and of major importance for such states.

The outcome of the V&R framework, discussed above, produced interesting tendencies, namely that many small states can succeed economically in spite of their economic vulnerability if they adopt good economic, social, political and environmental governance, which could enable them to reduce and even withstand the negative effects of external shocks. It therefore follows that it benefits small states to embed resilience-building measures into their plans and strategies, to promote macroeconomic stability and market flexibility without taking excessive risks. As has been argued above, good political, social and environmental management are also conducive to resilience building.

Profiling to identify resilience strengths and weaknesses

The methodological framework proposed in this chapter can be used to assess resilience gaps in particular countries. Profiling for resilience strengths and weaknesses first requires the identification of economic vulnerabilities and the resilience gaps in a country. This exercise could be carried out in consultation with stakeholders on the ground, including the government, politicians representing different ideologies, experts in the various aspects of political, economic, social and environmental governance, and representatives of different civil society groups. A method for conducting such a profiling exercise in practice has been described by Briguglio et al. (2010).

Once the resilience strengths and weakness have been identified, measures to maximise the strengths and address the weakness can be drawn up and mainstreamed into national strategic directions. For example, if it is found that macroeconomic stability is endangered by lack of fiscal discipline leading to the accumulation of public debt, or that there is too much market rigidity leading to lack of response in the face of shortages or surpluses, measures could be introduced to address these weaknesses. This argument also applies to gaps in the other resilience-building policies identified in this study, including political, social and environmental governance.

Implications for domestic and foreign direct investment (FDI)

Investment, whether originating domestically or from foreign sources, is an important contributor to growth and development. One expects that, everything else remaining equal, domestic and foreign investments are more likely to be attracted to a country that is well-governed economically and that enjoys political and social stability, than to a badly governed and socially unstable country. Other factors that serve to attract investment are good-quality infrastructure, including telecommunications, and a favourable business culture; these are also factors associated with good economic governance.⁷² Small states tend to be disadvantaged with regard to investment attraction by their small domestic markets and poor natural resource endowments; however, good economic governance can to some extent make up for these inherent deficiencies.

The study presented in this chapter has obvious implications for investment attraction because of the connection between economic resilience building and factors that are conducive to investment attraction, including good economic, social and environmental governance. Small countries such as Singapore, Malta and Mauritius manage to attract substantial FDI, even though they lack natural resources and have a relatively small domestic market.

2.7.3 Policy implication at the international level

Vulnerability and international community support for small states

Although, as shown in this chapter, small states tend to be highly economically vulnerable, this condition is generally not considered to be an entitlement for aid and/or for exceptions from certain obligations, which are usually granted to countries with low per capita income.

An important implication of the present study, with regard to conditionalities relating to aid and other forms of support, is that resilience building should feature as a major objective of such support for small states. Briguglio (2010) argues that aid aimed at promoting and supporting economic stability, market efficiency, social development and environmental management is likely to have a lasting effect on recipient countries. This is not only because such aid helps build economic resilience, but also because it is likely to foster the belief in the recipient country itself that it can climb the development ladder through improved economic governance.

A vulnerability criterion in schemes with small states as beneficiaries

The V&R framework proposed in this chapter has important implications for donor countries and international organisations, principally because, when donor schemes are based mainly on the income per capita criterion, many small states are disqualified from benefitting from certain schemes because they are middle-income countries.

Briguglio (2013) argues that, while international organisations generally acknowledge that small economies tend to be highly economically vulnerable, the interventions offered by them do not always adequately address the special concerns of small, vulnerable economies (SVEs). Generally speaking, those small states that benefit from

special entitlements and exceptions do so as a result of being low-income countries, such as least developed countries (LDCs) that benefit from special treatment by the World Trade Organization (WTO) and the World Bank.⁷³

For this reason, this chapter proposes that a vulnerability criterion should effectively be factored in when devising schemes to support small states and that, when such schemes are mainly triggered by the vulnerability criterion, the support to such states should be directed mostly at enabling them to improve their economic, social, political and environmental governance, to enhance their economic resilience.

The World Bank and small states

The portfolio of development-facilitating instruments available to all World Bank members is also available to small states, but the World Bank offers the 'small island exception' within its International Development Association (IDA) schemes. The small island exception⁷⁴ does offer the possibility of concessional support to middle-income SVEs but, generally speaking, the World Bank is not one of the most attractive sources of financial support for small states. This is mostly because of the burdensome conditionalities attached to such support, sometimes based on a 'one-size-fits-all' approach.⁷⁵ If a vulnerability criterion is effectively factored into the World Bank's support schemes, many middle-income small states will be able to benefit better from World Bank funds. When such support is triggered on the basis of a vulnerability criterion, it should mainly be directed at building the economic resilience of the beneficiary small state.

The IMF and support eligibility

The IMF has only recently given specific attention to small states as a category of countries,⁷⁶ and the voice of such states is generally considered not to be strong enough within this organisation. Broome (2011) contends that small states have a weak voice in their negotiations with the IMF, in spite of the fact that small states face higher stakes than larger economies and have a narrower range of policy choices at their disposal.

While there is no special programme designed for small states, the IMF contends that country-specific mechanisms offered by the fund cater well for these countries' needs. According to the IMF (2013), recent reforms in certain mechanisms of special interest for small states, such as introduction of the new emergency assistance initiatives, brought an increase in the usage of the fund's tools by both low-income and market-access small states, although these changes may also be attributed to the global financial crisis. The recent reform in the IMF brought two flexible, short-term lending mechanisms of specific interest for small states, namely (a) the Standby Credit Facility and (b) the Rapid Credit Facility.

Griffith-Jones and Tyson (2010), however, argue that the focus of the IMF's compensatory financing, including the automatic provision of rapid and significant liquidity for countries facing purely external shocks, has been aimed at low-income countries and therefore generally excludes middle-income small states.

Again, if a vulnerability criterion were effectively factored into the IMF's support schemes, the IMF would better serve many middle-income small states. As was argued with regard to World Bank schemes, when such support is triggered on the basis of a vulnerability criterion, it should be directed mainly at economic resilience building of the beneficiary small state.

International trade and the WTO

Within the World Trade Organization, a work programme on SVEs⁷⁷ was put in place in 2001 within the overall framework of the Doha Development Agenda, in order 'to frame responses to the trade-related issues, identified for the fuller integration of small, vulnerable economies into the multilateral trading system, and not to create a sub-category of WTO members' (Ministerial Declaration 2001, para. 35). A list of proposals put forward by SVEs addressing trade-related issues that affect them is presented in the WTO document *An Approach to Framing Responses to the Trade-Related Problems of Small Economies*.⁷⁸ These proposals are based on the special characteristics of SVEs, including a high degree of economic vulnerability.

One criticism of the SVEs work programme is that it encompasses among its membership not only small states⁷⁹ but larger states as well, as membership is based on the share of a country's trade in international trade, not smallness per se.⁸⁰

Another factor relates to the weak negotiating power of small states within the WTO. Such weakness may emanate from capacity constraints, such as a small pool of negotiators and limited budget allocations (Jones et al. 2010). According to Panke (2012), this leads to difficulties in preparing positions for all items on the negotiation agenda and in developing negotiation strategies in great detail, which might inhibit small states from successfully influencing negotiation outcomes. Horscroft (2006) contends that the outcomes of WTO negotiations require consensus, starting with the most powerful countries and progressively incorporating other major players until it reaches the periphery, namely the small states, by which time consensus is a foregone conclusion.

The small states within the WTO argue that they should be considered for special treatment on the basis of their special characteristics, notably proneness to external shocks (Palayathan 2004). Palayathan further contends that the pressures arising from dismantling the preferential trade arrangements of a number of small states have eroded a safety valve, which used to somewhat compensate for their inherent disadvantages.

In this regard, the effective use of a vulnerability criterion, discussed above, may be useful to better identify small vulnerable economies and to address their special circumstances.

Implications regarding international and bilateral donors

Bilateral donors are mostly Organisation for Economic Co-operation and Development (OECD) countries, with the European Union (EU) being at the

forefront of supporting small island developing states, many of which are former colonies of EU member countries. Again an implication of this chapter with regard to development support by bilateral donors is that aid for improving economic governance would strengthen the ability of small states to minimise the negative effects of external shocks, taking into consideration the special circumstances of each recipient country.

Regional co-operation

Owing mostly to the problem of indivisibility of certain overhead costs, regulatory frameworks, particularly those required for good economic and environmental governance, may be prohibitively expensive for a single small state on its own, but affordable regionally.⁸¹ For this reason small states could benefit from regional co-operation by jointly undertaking policy measures conducive to resilience building.

Such co-operation could, for example, be successfully undertaken in strengthening cross-border environmental governance in the region, by putting in place region-wide competition law and policy, and by developing regional regulatory frameworks for telecommunications and environmental management.

Environmental governance and sustainable development

An implication of the study presented in this chapter is that environmental management is a pillar of economic resilience building. In the international arena, small states made their voice heard on environmental management in the context of sustainable development. This was to a large extent a consequence of the lobbying role of the Alliance of Small Island States (AOSIS) within the UN, which resulted in the global conference on the sustainable development of SIDS held in Barbados in 1994. A sequel conference was held in Mauritius in 2005 and a third one is due to be held in Samoa in 2014. The two outcome documents of the Barbados Global Conference⁸² and the Mauritius International Meeting⁸³ identified a number of major environmental concerns for small states, with climate change placed on top of the list.⁸⁴ AOSIS also has a relatively strong voice in climate change negotiations,⁸⁵ as evidenced during the various Conferences of the Parties (COP).⁸⁶

Therefore, as a strategic direction at the upcoming Third SIDS Global Conference to be held in Samoa in September 2014, the governments of SIDS should link the need to improve their environmental governance with economic resilience building, in view of their high degree of vulnerability. In this regard, the international community should supplement the efforts by SIDS governments themselves.

It should be noted that some analysts argue that the international community has not been sufficiently supportive in the implementation of the Barbados Programme of Action (United Nations 1994) and the Mauritius Strategy (United Nations 2005). As the UN Secretary General remarked during the ten-year review on the Mauritius Strategy, 'there is evidence that existing support has increasingly fallen short of the mounting challenges faced by these States, including those brought about by climate change'.⁸⁷

2.8 Conclusion

The overall conclusion of this chapter is that small states tend to be highly exposed to external economic shocks because of their inherent characteristics, including a high degree of economic openness, exacerbated by a high degree of dependence on a narrow range of exports and on strategic imports. However, this should not be construed as an argument for complacency on the part of small states, because a number of policy options are open to them which could enable these states to minimise the negative effects of external economic shocks.

Policies that are conducive to economic resilience building include the promotion of macroeconomic stability and market flexibility, while at the same time taking care not to take excessive risk, particularly on the financial markets. Other resilience-building policies discussed in this chapter are good political governance, social development and environmental management.

The major messages implied in this analysis are:

- (a) economic resilience building is multifaceted and this calls for a holistic approach where social, political and environmental governance policies accompany and support economic policies;
- (b) given that small states tend to be highly exposed to external shocks, they should assign major importance to resilience-building policies and should embed such policies into their national plans and strategies; and
- (c) multilateral and bilateral donors should effectively factor vulnerability criteria into their schemes to support small states.

Notes

- 1 Briguglio et al. (2009) published a similar study with the same data and same results as Briguglio et al. 2006, but the 2009 paper included revised text, following comments by the reviewers.
- 2 These indices can be grouped into three broad categories, namely (a) the Briguglio-type indices (e.g. Briguglio and Galea 2003), which utilise a limited number of variables, including trade openness, rescaled using the max–min formula, often summed on the basis of equal weights; (b) the Commonwealth-type indices (e.g. Atkins et al. 2000), which are similar to the Briguglio-type indices, but the variables are not rescaled, with the weights of the components being derived through a regression method; and (c) the Committee for Development Policy of the United Nations (CDP)-type of indices (e.g. Guillaumont 2009), also utilising the max-min formula to rescale a large number of variables as components, which exclude trade openness. The max-min formula utilised by the Briguglio-type and the CDP-type indices can be expressed as follows:

$$XR_i = (X_i - X_{\min}) / (X_{\max} - X_{\min}); i = 1, 2, 3, \dots, n$$

where:

- XR_i is the rescaled (or normalised) observation i in an array of n observations;
- X_i is an actual observation i in the same array of observations;
- $X_{\min}$ is the minimum value the same array of observations; and
- $X_{\max}$ is the maximum value in the same array of observations.

A major problem with the use of this formula relates to extreme outliers. Such outliers may distort the results of the spread of rescaled values. Leaving out extreme outliers is a procedure commonly used in vulnerability indices, e.g. Crowards (2000) and UN Department of Economic and Social Affairs (UNDESA) (2011).

- 3 Thus self-inflicted exposure to shocks would, in line with this framework, be included under the heading of resilience building, as a negative factor. In this sense, resilience building can be considered as a continuum, ranging from policies that highly exacerbate vulnerability to external shocks to policies that highly enable a country to withstand external shocks.
- 4 Some authors do not distinguish between the causes and the manifestation of vulnerability. For example, the CDP economic vulnerability index (CDP-EVI) (Guillaumont 2009) includes both, namely a component relating to the structure of the economy (cause of vulnerability) and a component relating to the manifestation of vulnerability (export instability).
- 5 Measured as exports and imports of goods and services as a ratio of GDP.
- 6 It was pointed out by Briguglio (1997), with regard to export concentration, that such concentration can be observed in both trade in goods as well as trade in services. Up to then, vulnerability indices utilised the concentration index devised by the UN Conference on Trade and Development (UNCTAD), which covers merchandise only. Briguglio devised a concentration index of exports of goods and services by also considering tourism and financial services in addition to merchandise exports. Export concentration was taken to be the percentage of the three highest export categories in total exports of goods and services.
- 7 Dependence on strategic imports was measured in terms of imports of commercial energy as a percentage of imports plus the production of commercial energy, while dependence on foreign sources of finance was taken to be remittances, capital and financial inflows as a percentage of GDP.
- 8 The indicators used to measure disaster proneness are various and include economic damage in relation to GDP (Briguglio 1995), the percentage of the population affected by natural disasters (Wells 1997; Atkins et al. 1998, 2000; Crowards 2000) and the number of deaths caused by natural disasters as a proportion of total population. Disaster proneness is included in economic vulnerability indices because disasters cause economic shocks over which a country has little control. Thus, this variable has been included in vulnerability indices because of the economic destabilising effects of disasters. This variable has been included in the vulnerability index constructed in the study presented in this chapter for the same reason. Cordina and Farrugia (2005) argued that the inclusion of disaster proneness in a vulnerability index might bias results because disaster variables are based on past events that need not be repeated in the near future.
- 9 Other studies on the economic vulnerability index include Chander (1996); Wells (1996, 1997); Crowards (1999, 2000a); Atkins et al. (1998, 2000); UNDESA (2011); Baritto (2008); and Turvey (2007).
- 10 Cordina (2008) – reacting to the argument that openness to international trade, often included in vulnerability indices, constitutes a source of livelihood for most small economies – argues that, while this is true, openness also renders small states susceptible to shocks in demand and terms of trade over which they can exercise very little control. The latter consideration justifies the inclusion of openness to international trade as a component of vulnerability.
- 11 Gonzales (2000) points out, with regard to the various vulnerability classifications, that ‘While small developing states on average emerge as being comparatively vulnerable, rankings of individual countries can differ substantially between alternative indices’.
- 12 It can be argued that small economies are price-takers and therefore if inflation were measured by the retail price index, which covers imported goods and services as well as locally produced goods and services, a significant proportion of inflation would be externally determined. In the revised version of the resilience index, proposed in the present study, the price index utilised is the GDP deflator, which relates to domestically produced goods and services.
- 13 On this issue see also Group of 30 (2010) and Cecchetti (2009).
- 14 A discussion on the meaning of governance is available at: web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/MENAEXT/EXTMNAREGTOPGOVERNANCE/0,,contentMDK:20513159~pagePK:34004173~piPK:34003707~theSitePK:497024,00.html (accessed 23 May 2014).

- 15 A correlation analysis between the non-income components of the HDI and a cohesion index proposed by Foa (2011), carried out by the present author for the countries covered by the cohesion index, indicated that these two variables are highly correlated.
- 16 Environmental management is particularly important in small islands for adaptation to climate change, as climate change could potentially usher in catastrophic impacts associated with, among other things, sea-level rise, health hazards and increased frequency of extreme events (see Intergovernmental Panel on Climate Change (IPCC) 2007, chapter 16).
- 17 The relationship between economic development and environmental quality is often discussed in terms of what is known as the Environmental Kuznets Curve (EKC), which is based on the hypothesis that, as a country develops, environmental degradation increases at first until some level of development is attained, after which environmental degradation would tend to decrease. Roberts (2006) argues that the small island states located in the Atlantic Ocean, Indian Ocean, Mediterranean Sea and South China Sea (known collectively as AIMS) that have succeeded economically have done so at great environmental cost, an argument that would seem to suggest that these small states are still on the upward sloping segment of the EKC.
- 18 The 'Mauritius Strategy' (United Nations 2005), paragraph 81, calls for the establishment of a task force to elaborate a resilience index, supported by the international community. Such an exercise was carried out by the Commonwealth Secretariat in collaboration with the Islands and Small States Institute of the University of Malta, culminating with the publication of Briguglio et al. (2006).
- 19 As noted elsewhere in this study, the environment management component was absent from the earlier study.
- 20 The choice of variables used for the construction of the vulnerability index and the resilience index constructed in this study was based on a number of desirable criteria including relevance, simplicity, transparency, reproducibility and affordability. Care was also taken to use indicators with as wide a coverage of small states as possible, given that the focus of the study is on small states. For further information on the desirable criteria, see Briguglio (2003).
- 21 As indicated above, there is some debate about whether the disaster proneness index should be included in the vulnerability index. The index was therefore recomputed without this component, as shown in Appendix 2.1b(v), and the results did not change drastically, with the main difference being that countries with high disaster proneness, including Samoa, St Lucia, St Kitts and Nevis, Haiti, Grenada, Vanuatu, Dominica, and Antigua and Barbuda, received slightly lower scores.
- 22 The population size is measured in logs in order to reduce the spread on the vertical axis from a few thousands in some Pacific island states to more than a billion in China and India. This implies that the relationship between a given variable and the actual population is a power function of the type $Y = AX^b$.
- 23 The fitted equation is $OPN = 94.284 - 11.674 P$, where OPN is trade openness and P is the log of population size. The correlation coefficient (R^2) = 0.130; t -statistic = -4.82; N = 183 countries. It can be seen from the scatter diagram that there is considerable variation around the fitted line.
- 24 Information about UNCTAD's concentration index is available at: unctadstat.unctad.org/TableViewer/summary.aspx (accessed 23 May 2014). It should also be noted that UNCTAD utilises the Herfindahl-Hirschmann formula to construct its concentration index, and includes only exports greater than \$100,000 or 0.3 per cent of total exports.
- 25 The fitted equation is $EXC = 79.23 - 4.376 P$, where EXC is export concentration and P is log of population size. The correlation coefficient (R^2) = 0.045; t -statistic = -2.5; N = 183 countries.
- 26 The fitted line is $DSI = 40.624 - 3.228 P$, where DSI is dependence on strategic imports and P is log of population size. The correlation coefficient (R^2) = 0.062; t -statistic = -3.5; N = 183 countries.
- 27 Available at: www.emdat.be/database (accessed 23 May 2014). This database is maintained by the Centre for Research on the Epidemiology of Disasters (CRED), Université catholique de Louvain, Brussels. EM-DAT distinguishes two generic categories for disasters (natural and technological), the natural disaster category being divided into five subgroups, which in turn cover 12 disaster types and more than 30 subtypes. This index uses the data for natural disasters, adjusted as explained in the text. An event is included on the database if at least one of the following criteria is fulfilled: (i) ten or more people reported killed; (ii) 100 or more people reported affected; (iii) declaration of a state of emergency; (iv) call for international assistance. Natural disasters

are categorised as geophysical (e.g. an earthquake or volcano); hydrological (e.g. a flood); meteorological (e.g. a storm); climatological (e.g. extreme temperature); and biological (e.g. an epidemic).

- 28 The equation for the fitted line is $DST = 91.257 - 18.712 P$, where DST is disaster damage as a percentage of GDP and P is the log of the population. The correlation coefficient (R^2) = 0.100; t -statistic = -4.5; N = 183 countries.
- 29 Another indicator, which was used in Briguglio and Galea (2003) and Crowards (1999), is 'peripherality', associated with high transport costs and marginalisation from main commercial centres. Briguglio and Galea argued that peripherality adds to the problem of trade openness with regard to external shocks. One problem with this variable is that it cannot be measured directly by taking the number of kilometres from a main commercial centre, or from the nearest island or from the nearest continent. This is mainly because there is the problem of establishing where the relevant commercial centre is located. In addition, in the case of certain island states, a relatively large proportion of international trade is directed to their former colonising masters, even though other centres of commercial activity could be more proximate. Two variables that may reflect the effects of remoteness are (a) the ratio of FOB/CIF factors and (b) the ratio of transport and freight costs to imports, both of which have been used in vulnerability indices to capture peripherality. However, these two indices may both be influenced to a large extent by factors other than remoteness, including landlockedness, trade relations with former colonising powers, national ownership of means of sea and air transport and others. For these reasons, the peripherality index was not used in the study presented in this chapter.
- 30 It should be stated, with regard to Figure 2.7, that, when constructing composite indices, the weighting scheme applied to the components is essentially subjective. Alternative weighting schemes for the four components were utilised as shown in Appendix 1b(v). See Briguglio (2003) and Farrugia (2007) for a discussion on the subjectivity of weighting schemes in composite indices.
- 31 The equation for the fitted line is $EVI = 0.676 - 0.091 P$, where EVI is economic vulnerability and P is the log of the population size. The correlation coefficient (R^2) = 0.350; t -statistic = -9.80; N = 183 countries. The average of the four components was rescaled using the min-max formula.
- 32 The alternative weighting schemes shown in Appendix 1b(v) confirm the general tendency that small states as a group tend to be more economically vulnerable than larger countries.
- 33 It should be noted here that the EVI and GDP per capita are not correlated, indicating that rich as well as poor countries may be inherently highly economically vulnerable. The equation of the fitted line between the EVI and the log of GDP per capita was $EVI = 0.321 - 0.0009 \log(GDPPC)$; $R^2 = 0.00012$; t -statistic = -0.15; N = 183 countries.
- 34 Briguglio et al. (2009) also used the annual government fiscal deficit as an indicator of the adequacy of government finances. However, this variable suffers from limited 'small state' coverage and it was therefore not used for the purpose of the study presented in this chapter.
- 35 Apart from its relevance to trade imbalances, the current account reflects the difference between national savings and investment. National savings are associated with resilience because, if an economy suffers from chronic savings shortages, it will not have room for manoeuvre in the face of adverse shocks.
- 36 For a discussion of external reserves in terms of coverage of monthly imports and resilience, see Crispolti and Tsibouris (2011).
- 37 For a discussion on the economic effects of the current account balance, see Ghosh and Ramakrishnan (2006).
- 38 Available at: www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx (accessed 23 May 2014).
- 39 The equation for the fitted $STB = 0.495 + 0.0118 P$, where STB is the stability index and P is the log of the population size. The correlation coefficient (R^2) = 0.005; N = 183 countries.
- 40 Information about the EFW Regulation Index is available at: www.freetheworld.com/2013/EFW2013-appendix-notes-sources.pdf. The most recent index pertains to the year 2013, and is available at: www.freetheworld.com/2013/EFW2013-complete.pdf (accessed 23 May 2014).
- 41 The EFW Index has 42 variables, organised into 23 components and five major areas, namely (i) size of government; (ii) legal system and security of property rights; (iii) sound money; (iv) freedom to trade internationally; and (v) regulation. The index is based on data sourced from

surveys, expert panels and generic case studies, including sources such as the International Monetary Fund, World Bank and World Economic Forum that provide data for a large number of countries. Most of the scores utilise the min–max formula to rescale the data (1 to 10). The methodology is further explained in the Explanatory Notes and Data Sources Appendix of Gwartney et al. (2013).

- 42 The 'labour market regulations' component consists of six subcomponents, namely (i) hiring regulations and minimum wage; (ii) hiring and firing regulations; (iii) centralised collective bargaining; (iv) hours regulations; (v) mandated cost of worker dismissal; and (vi) conscription. The sources of the data are the World Economic Forum's *Global Competitiveness Report* (2013), the World Bank Doing Business Index and data compiled by the International Institute for Strategic Studies.
- 43 The 'business regulations' component consists of six subcomponents, namely (i) administrative requirements; (ii) bureaucracy costs; (iii) starting a business; (iv) extra payments/bribes/favouritism; (v) licensing restrictions; and (vi) cost of tax compliance. The sources of the data are the World Economic Forum's *Global Competitiveness Report* and the World Bank Doing Business Index.
- 44 The EFW Index excludes 32 countries, as listed in Appendix 2.2b of the current study, many of which are small states.
- 45 The equation for the fitted line is $MFX = 7.388 - 0.3086 P$, where MFX is market flexibility and P is the log of population size. The correlation coefficient (R^2) = 0.0545; $N = 183$. When the actual data (that is the data available on the EFW Index, without the estimated values) were plotted against country size, a similar pattern emerged.
- 46 See Appendix 2.2b(iii) for an explanation of how the 'financial prudence' index was constructed.
- 47 The fitted line of this equation is $LFP = 2.627 + 0.0214 P$; $R^2 = 0.0087$, where LFP is lack of financial prudence and P is the log of the population size; $N = 183$ countries.
- 48 The fitted line of this equation is $FDT = 1.705 + 0.419 P$; $R^2 = 0.077$, where FDT is financial depth and P is the log of the population size; $N = 183$ countries.
- 49 The equation for the fitted line is $FNR = 0.308 + 0.0102 P$; $R^2 = 0.0027$, where FNR is financial riskiness and P is the log of population size.
- 50 It should be recalled that the 'financial riskiness' index was rescaled to take a value of between 0 and 1.
- 51 Alternative weighting schemes are presented in Appendix 2.2b(viii).
- 52 The fitted line is $AMFX = 0.6879 - 0.0466 P$, where AMFX is the adjusted market flexibility index and P is the log of the population size. The correlation coefficient (R^2) = 0.0446; $N = 183$ countries.
- 53 The indicators' website is available at: info.worldbank.org/governance/wgi/index.asp. Other possible governance indicators were considered, including the second component of the Economic Freedom of the World Indicators, entitled 'Legal Structure and Property Rights' (available at: www.freetheworld.com/2013/EFW2013-complete.pdf), the Rule of Law Index (available at: dx.doi.org/10.2139/ssrn.1966257), the Corruption Perception Index (available at: www.transparency.org/files/content/pressrelease/2012_CPITechnicalMethodologyNote_EMBARGO_EN.pdf), the World Bank's Country Policy and Institutional Assessment (available at: data.worldbank.org/indicator/IQ.CPA.PUBS.XQ), the Global Competitiveness Indictors component entitled 'public institutions', composed of legal and administrative frameworks (available at: www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2013-14.pdf), and the Institutions Climate Index (available at: www.ifw-kiel.de/ausbildung/asp/asp-wp/2012/aspwp457.pdf). It was decided to utilise the WGI in the resilience index, mostly because of the criteria of 'small state' coverage and relevance to the issue being explored.
- 54 The equation for the fitted line is $GVN = 0.854 - 0.293 P$, where GVN is the governance score (ranging from -2.5 to +2.5) and P is the log of the population size. The correlation coefficient (R^2) = 0.055; $N = 183$ countries.
- 55 Other social indicators considered were the United Nations social indicators (available at: unstats.un.org/unsd/demographic/products/socind/), the World Bank social indicators (available at: data.worldbank.org/topic/social-development) and the 'social inclusion and equity' cluster of CPIA (available at: <http://data.worldbank.org/indicator/IQ.CPA.SOCI.XQ/countries>). It was decided to utilise the non-income components of the HDI in the resilience index, a decision based mostly on the criteria of 'small state' coverage and relevance to the issue being explored.

- 56 Average number of years of education received by people aged 25 and older, converted from educational attainment levels using official durations of each level.
- 57 Number of years of schooling that a child of school entrance age can expect to receive if prevailing patterns of age-specific enrolment rates persist throughout the child's life.
- 58 Number of years a newborn infant could expect to live if prevailing patterns of age-specific mortality rates at the time of birth stay the same throughout the infant's life.
- 59 The equation for the fitted line is $SOC = 0.694 - 0.027 P$, where SOC is non-income HDI and P is the log of the population size. The correlation coefficient (R^2) = 0.008; N = 183 countries.
- 60 Other indicators considered were the United Nations indicators (available at: unstats.un.org/unsd/environment/qindicators.htm), the European Environment Agency (2012) *Environmental Indicator Report* (available at: www.eea.europa.eu/publications/environmental-indicator-report-2012), the environmental vulnerability index (EnVI) developed by SOPAC (available at: www.sopac.org/index.php/environmental-vulnerability-index) and the 'ecological footprint' (available at: www.footprintnetwork.org/). It was concluded that the indicator sets, with the exception of the EnVI, suffered from the weakness of limited small country coverage. The EnVI, however, had two major drawbacks, namely that it is not focused on environmental governance and it has not been updated since 2005.
- 61 Available at: epi.yale.edu (accessed 23 May 2014). This index builds on the Environmental Sustainability Index proposed in Esty et al. (2005).
- 62 A detailed description of how the indicator weights were established is available at: epi.yale.edu/sites/default/files/downloads/reepidataspreadsheets.zip (accessed 23 May 2014).
- 63 Available at: www.epi.yale.edu/sites/default/files/downloads/Appendix1%2012.20.12.pdf (accessed 23 May 2014).
- 64 The equation for the fitted line is: $EPI = 44.986 + 1.3044 P$, where EPI is the environmental performance index and P is the log of population size. The correlation coefficient (R^2) = 0.017; N = 183 countries.
- 65 Alternative weighting schemes for the index components are presented in Appendix 2.1b(v).
- 66 The equation for the fitted line between the ERI and the log GDP per capita (GDPPC), averaged over a ten-year period is: $ERI = -0.1441 + 0.778 \log GDPPC$; $R^2 = 0.634$; N = 183 countries.
- 67 The threshold between high and low resilience scores was set at 0.513 and that between high and low vulnerability scores was set at 0.332.
- 68 It should be noted that the boundaries of each quadrant were the average scores of the two indices. Different thresholds would have produced different classifications, although the general tendencies shown in Table 2.1 will remain true if other thresholds are used.
- 69 UNCTAD (2013a) also used a form of the V&R framework in discussing ways in which external shocks can be mitigated to reduce the harm on trade.
- 70 Available at: www.un.org/ga/search/view_doc.asp?symbol=A/65/115 (accessed 23 May 2014), footnote 17.
- 71 Information available at: www.sids2014.org/content/documents/260attrdlu7.pdf (accessed 23 May 2014).
- 72 For a discussion on what attracts FDI, see Blomström (2001) and Dunning (1993). Read (2006) discusses the attraction of FDI in SIDS.
- 73 In the case of graduation from least developed country (LDC) status, where a vulnerability index is used as a criterion, its effect may be negligible because economic vulnerability is just one of three graduation criteria and graduation requires that a country fulfil at least two of the three criteria. In addition, if the per capita gross national income (GNI) of an LDC would have risen to a level at least double the graduation threshold, the country will be deemed eligible for graduation regardless of its performance under the other criteria. See UNCTAD (2013b). See also the statement by the Government of the Maldives (2009) on this issue, available at: www.maldivespartnershipforum.gov.mv/pdf/Impacts%20of%20LDC%20Graduation.pdf (accessed 23 May 2014).
- 74 IDA is an attractive tool for developing countries, as it offers loans with little or no interest that can be repaid over the period of 25–40 years with a grace period of 5–10 years. This mechanism was designed to assist the poorest countries with concessional funding. However, since 1985 small island states have been able to use this tool via the 'small island economy exception', even

if their per capita incomes exceed the cut-off income threshold but lack the International Bank of Reconstruction and Development (IBRD) creditworthiness requirement. The small island economy exception includes two important measures designed specifically for small states, namely (a) the elimination of the maximum per capita allocation ceiling and (b) doubling the base allocation. With these changes, the country allocation for low-income small island economies has been increased. Under the IDA scheme there are two exceptions of special interest to small states, namely (a) allocations related natural disasters and (b) provisions for regional initiatives (World Bank 2010). The first exception was used, for example, by Tonga and Samoa to receive additional funds after the 2009 tsunami (World Bank 2010). The publication Commonwealth Secretariat (2012) contends that the CRW – which admittedly is a welcome development – as a mechanism lacks the scale of funding needed to successfully combat exogenous shocks.

- 75 The World Bank tried to reduce these disadvantages, and one of the tools that can eventually assist in the process is the Programme for Result Financing (P4R).
- 76 IMF (2013) articulates its position with regard to small states.
- 77 The term ‘small, vulnerable economies’ as defined within the WTO applies to ‘Members with economies that, in the period 1999 to 2004, had an average share of (a) world merchandise trade of no more than 0.16 per cent or less, and (b) world trade in non-agricultural products of no more than 0.1 per cent and (c) world trade in agricultural products of no more than 0.4 per cent’. See: TN/AG/W/4/Rev.4/, paragraph 157, available at: www.wto.org/english/tratop_e/dda_e/chair_texts11_e/agric_e.doc (accessed 23 May 2014).
- 78 See: WT/COMTD/SE/W/13/Rev.1, available at: ctrc.sice.oas.org/TRC/WTO/SmallEcon/SEW13R1_e.doc (accessed 23 May 2014).
- 79 See, for example, the list of SVEs in ‘Groups in the WTO’, available at: www.wto.org/english/tratop_e/dda_e/negotiating_groups_e.pdf (accessed 23 May 2014).
- 80 See: *Briefing Note: Small, Vulnerable Economies*, available at: www.wto.org/english/thewto_e/minist_e/min11_e/brief_svc_e.htm (accessed 23 May 2014).
- 81 On this issue see Schiff (2002).
- 82 The full title of the document was *Barbados Programme of Action for the Sustainable Development of Small Island Developing States*, available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/CONF.167/9. The conference of which this document is the outcome was held in April/May 1994.
- 83 The full title of the document was *Mauritius Strategy for the further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States*, available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/CONF.207/11 (accessed 23 May 2014). The Mauritius International Meeting, of which this document is the outcome, was held in January 2005. Of interest with regard to the present study is that at the meeting it was agreed that some form of metric was needed to assess the extent to which countries were building their economic resilience. This was reflected in paragraph 81 of the Mauritius Strategy, which stated that ‘Consideration should be given to the establishment of a task force to elaborate a resilience index, supported by the international community. This work would be significantly enhanced as a result of the successful implementation of the activities outlined above’.
- 84 Small island states, particularly low-lying islands, are likely to be harmed by climate change more than other groups of countries, as a result of sea-level rise. Yet their greenhouse gas emissions at the global level are negligible. This ethical issue is highlighted in the IPCC Fourth Assessment Reports, in the chapter on small islands (WGII). See IPCC (2007), chapter 16.
- 85 AOSIS is a coalition of some 43 low-lying and small island countries, many of which are highly vulnerable to sea-level rise.
- 86 The Conference of the Parties (COP) is the supreme decision-making body of the United Nations Framework Convention on Climate Change (UNFCCC).
- 87 Available at: www.un.org/ga/search/view_doc.asp?symbol=A/65/115 (accessed 23 May 2014), 38.
- 88 There were missing data for government debt to GDP ratio for Afghanistan, Bangladesh, Kiribati, Micronesia, Mongolia, Papua New Guinea, Samoa and Sri Lanka. As data for these countries were available for the other components of the resilience index, it was decided to retain these countries and search for alternative sources of debt data, mostly from IMF Article IV reports.
- 89 The countries with missing EFWI data were Afghanistan, Antigua and Barbuda, Belarus, Bhutan, Comoros, Djibouti, Dominica, Equatorial Guinea, Eritrea, Grenada, Guinea, Iraq, Kiribati, Lao

- PDR, Liberia, Libya, Maldives, Marshall Islands, Micronesia FS, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Samoa, São Tomé and Príncipe, Seychelles, Solomon Islands, Sudan, Tonga, Turkmenistan, Uzbekistan and Vanuatu.
- 90 The 36 countries with missing 'financial prudence' data were Afghanistan, Antigua and Barbuda, The Bahamas, Belarus, Belize, Central African Republic, Comoros, Democratic Republic of the Congo, Republic of the Congo, Djibouti, Dominica, Equatorial Guinea, Eritrea, Fiji Islands, Grenada, Guinea-Bissau, Iraq, Kiribati, Maldives, Marshall Islands, Micronesia FS, Niger, Papua New Guinea, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Samoa, São Tomé and Príncipe, Solomon Islands, Sudan, Syrian Arab Republic, Tajikistan, Togo, Tonga, Turkmenistan, Uzbekistan and Vanuatu.
 - 91 Available at: data.worldbank.org/indicator/IC.LGL.CRED.XQ/countries?display=default.
 - 92 The WGI is available at: info.worldbank.org/governance/wgi/index.asp (accessed 23 May 2014).
 - 93 The data were sourced from the HDI website, available at: <https://data.undp.org/dataset/Non-income-HDI-value/2er3-92jj> (accessed 23 May 2014).
 - 94 These were Antigua and Barbuda, Bahrain, Dominica, Fiji Islands, Grenada, Hong Kong, Kiribati, Marshall Islands, St Kitts and Nevis, St Vincent and the Grenadines, São Tomé and Príncipe, and Seychelles. As can be seen, these are mostly small states.
 - 95 This is sourced from the EPI database itself, available at: epi.yale.edu/sites/default/files/downloads/reepidataspreadsheets.zip (accessed 23 May 2014).
 - 96 This is sourced from the UNCTAD statistical database, available at: unctadstat.unctad.org/TableViewer/tableView.aspx?ReportId=95 (accessed 23 May 2014).
 - 97 This is measured by the government effectiveness component of the WGI indicators.
 - 98 There were a few missing country observations relating to child mortality in the EPI, as follows: Antigua and Barbuda, Dominica, and St Kitts and Nevis (for which the child mortality rates were assumed to be similar to those of St Vincent/Grenadines and St Lucia, for which data were available); Kiribati and Marshall Islands (for which the child mortality rates were assumed to be similar to those of Samoa and Tonga, for which data were available); and Seychelles (for which the mortality rates were assumed to be similar to that of Mauritius, for which data were available).
 - 99 These were Afghanistan, Antigua and Barbuda, The Bahamas, Barbados, Belize, Bhutan, Burkina Faso, Burundi, Cape Verde, Central African Republic, Chad, Comoros, Djibouti, Dominica, Equatorial Guinea, Fiji Islands, The Gambia, Grenada, Guinea, Guinea-Bissau, Guyana, Hong Kong, Kiribati, Laos, Lesotho, Liberia, Madagascar, Malawi, Maldives, Mali, Marshall Islands, Mauritania, Mauritius, Micronesia, Montenegro, Niger, Papua New Guinea, Rwanda, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Samoa, São Tomé and Príncipe, Seychelles, Sierra Leone, Solomon Islands, Suriname, Swaziland, Tonga, Uganda and Vanuatu.
 - 100 Data was sourced from the *CIA Factbook*, which is available at: www.cia.gov/library/publications/the-world-factbook/rankorder/2241rank.html.
 - 101 Landlockedness was an additional dummy variable included as a component of the EV index, but this did not enter significantly into the equation and was dropped.

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Appendix 2.1 Data for the economic vulnerability index

2.1a The economic vulnerability index and its components

Table A2.1.1 Data pertaining to the EVI and its components (See legend for column headings at the end of the table)

Countries	OPN	DSI	EXC	DST	EVI	EVIRS
Afghanistan	0.230	0.438	0.191	0.015	0.219	0.126
Albania	0.397	0.313	0.544	0.003	0.314	0.279
Algeria	0.305	0.226	0.952	0.050	0.383	0.389
Angola	0.473	0.232	1.000	0.000	0.426	0.458
Antigua & Barbuda	0.493	0.299	0.830	0.217	0.460	0.512
Argentina	0.179	0.125	0.478	0.015	0.199	0.095
Armenia	0.298	0.338	0.565	0.018	0.305	0.264
Australia	0.184	0.216	0.588	0.021	0.252	0.179
Austria	0.477	0.200	0.498	0.005	0.295	0.248
Azerbaijan	0.344	0.148	0.922	0.010	0.356	0.346
Bahamas	0.389	0.514	0.822	0.098	0.456	0.505
Bahrain	0.528	0.161	0.631	0.000	0.330	0.304
Bangladesh	0.206	0.326	0.101	0.101	0.184	0.070
Barbados	0.470	0.667	0.579	0.015	0.432	0.468
Belarus	0.637	0.541	0.539	0.008	0.431	0.466
Belgium	0.727	0.253	0.533	0.002	0.379	0.382
Belize	0.537	0.522	0.716	0.155	0.483	0.548
Benin	0.179	0.439	0.571	0.002	0.298	0.252
Bhutan	0.442	0.278	0.707	0.002	0.357	0.347
Bolivia	0.379	0.191	0.740	0.141	0.363	0.356
Bosnia & Herzegovina	0.470	0.345	0.396	0.012	0.306	0.265
Botswana	0.338	0.289	0.823	0.000	0.363	0.356
Brazil	0.112	0.244	0.536	0.007	0.225	0.135
Brunei Darussalam	0.463	0.206	0.959	0.000	0.407	0.427
Bulgaria	0.569	0.356	0.402	0.004	0.333	0.308
Burkina Faso	0.201	0.351	0.445	0.004	0.250	0.176
Burundi	0.274	0.313	0.415	0.000	0.251	0.177
Cambodia	0.490	0.269	0.213	0.051	0.256	0.185
Cameroon	0.178	0.415	0.633	0.000	0.306	0.266
Canada	0.271	0.190	0.499	0.006	0.242	0.162
Cape Verde	0.354	0.471	0.873	0.005	0.426	0.457
Central African Rep.	0.143	0.657	0.630	0.000	0.357	0.348
Chad	0.313	0.210	0.886	0.000	0.352	0.339
Chile	0.316	0.353	0.737	0.062	0.367	0.363
China	0.223	0.206	0.622	0.067	0.279	0.222
Colombia	0.162	0.164	0.680	0.014	0.255	0.184
Comoros	0.257	0.454	0.582	0.079	0.343	0.325
Congo, Democratic Rep.	0.569	0.362	0.843	0.001	0.443	0.485
Congo, Republic	0.606	0.179	0.911	0.000	0.424	0.454

(continued)

Countries	OPN	DSI	EXC	DST	EVI	EVI RS
Costa Rica	0.351	0.222	0.644	0.022	0.310	0.271
Côte d'Ivoire	0.399	0.556	0.668	0.000	0.406	0.425
Croatia	0.388	0.340	0.569	0.006	0.325	0.296
Cyprus	0.409	0.390	0.528	0.000	0.332	0.306
Czech Republic	0.592	0.152	0.641	0.016	0.350	0.336
Denmark	0.466	0.229	0.456	0.007	0.290	0.239
Djibouti	0.446	0.363	0.370	0.002	0.295	0.248
Dominica	0.450	0.431	0.727	0.218	0.457	0.507
Dominican Republic	0.245	0.422	0.502	0.030	0.300	0.256
Ecuador	0.298	0.341	0.820	0.053	0.378	0.381
Egypt	0.217	0.367	0.551	0.007	0.285	0.232
El Salvador	0.299	0.383	0.302	0.244	0.307	0.267
Equatorial Guinea	0.654	0.447	0.986	0.000	0.522	0.611
Eritrea	0.134	0.425	0.000	0.003	0.140	0.000
Estonia	0.727	0.310	0.403	0.002	0.361	0.353
Ethiopia	0.198	0.346	0.668	0.001	0.303	0.261
Fiji	0.549	0.583	0.617	0.077	0.456	0.506
Finland	0.375	0.285	0.500	0.000	0.290	0.240
France	0.244	0.258	0.459	0.006	0.242	0.163
Gabon	0.318	0.215	0.966	0.000	0.375	0.376
Gambia	0.166	0.498	0.699	0.000	0.341	0.321
Georgia	0.409	0.350	0.512	0.043	0.328	0.301
Germany	0.409	0.212	0.599	0.004	0.306	0.265
Ghana	0.330	0.301	0.653	0.001	0.321	0.290
Greece	0.246	0.401	0.588	0.025	0.315	0.280
Grenada	0.327	0.438	0.697	0.367	0.457	0.507
Guatemala	0.264	0.378	0.499	0.029	0.293	0.244
Guinea	0.271	0.422	0.867	0.000	0.390	0.400
Guinea-Bissau	0.208	0.560	0.875	0.000	0.411	0.433
Guyana	0.591	0.488	0.423	0.120	0.405	0.424
Haiti	0.292	0.603	0.299	0.403	0.399	0.415
Honduras	0.460	0.342	0.379	0.177	0.340	0.319
Hong Kong SAR	1.000	0.068	0.570	0.000	0.410	0.431
Hungary	0.810	0.164	0.604	0.010	0.397	0.411
Iceland	0.491	0.268	0.688	0.001	0.362	0.355
India	0.220	0.419	0.343	0.028	0.252	0.179
Indonesia	0.200	0.340	0.484	0.024	0.262	0.195
Iran, Islamic Republic	0.199	0.195	0.815	0.054	0.316	0.281
Iraq	0.321	0.318	0.981	0.000	0.405	0.424
Ireland	0.827	0.264	0.447	0.002	0.385	0.391
Israel	0.323	0.287	0.585	0.003	0.299	0.255
Italy	0.251	0.318	0.517	0.019	0.276	0.217
Jamaica	0.375	0.572	0.697	0.127	0.443	0.484
Japan	0.119	0.456	0.675	0.019	0.317	0.283
Jordan	0.516	0.460	0.508	0.018	0.375	0.377
Kazakhstan	0.325	0.158	0.850	0.002	0.334	0.310
Kenya	0.317	0.405	0.457	0.002	0.295	0.248
Kiribati	0.455	0.505	0.538	0.000	0.375	0.375
Korea	0.475	0.413	0.656	0.000	0.386	0.393
Kuwait	0.360	0.187	0.895	0.000	0.361	0.353

(continued)

Countries	OPN	DSI	EXC	DST	EVI	EVIRS
Kyrgyz Republic	0.616	0.378	0.333	0.050	0.344	0.327
Lao PDR	0.210	0.335	0.640	0.000	0.296	0.249
Latvia	0.495	0.339	0.401	0.005	0.310	0.272
Lebanon	0.302	0.373	0.383	0.007	0.266	0.202
Lesotho	0.719	0.355	0.300	0.000	0.343	0.325
Liberia	1.000	0.048	0.471	0.029	0.387	0.395
Libya	0.344	0.271	0.988	0.000	0.401	0.417
Lithuania	0.627	0.501	0.429	0.004	0.390	0.400
Luxembourg	1.000	0.221	0.624	0.007	0.463	0.517
Macedonia, FYR	0.551	0.304	0.321	0.014	0.298	0.252
Madagascar	0.313	0.331	0.449	0.101	0.298	0.253
Malawi	0.280	0.196	0.829	0.008	0.328	0.301
Malaysia	0.701	0.201	0.562	0.003	0.367	0.363
Maldives	0.697	0.505	0.958	0.141	0.575	0.696
Mali	0.223	0.361	0.296	0.000	0.220	0.128
Malta	0.864	0.407	0.432	0.000	0.426	0.457
Marshall Islands	0.549	0.000	0.989	0.000	0.385	0.391
Mauritania	0.618	0.492	0.827	0.000	0.484	0.551
Mauritius	0.536	0.458	0.441	0.027	0.366	0.361
Mexico	0.259	0.166	0.713	0.015	0.288	0.237
Micronesia	0.460	0.384	0.975	0.008	0.457	0.507
Moldova	0.584	0.335	0.321	0.097	0.334	0.311
Mongolia	0.580	0.391	0.752	0.336	0.515	0.600
Montenegro	0.501	0.411	0.722	0.000	0.409	0.429
Morocco	0.332	0.408	0.407	0.009	0.289	0.238
Mozambique	0.256	0.379	0.591	0.043	0.317	0.283
Myanmar	0.000	0.343	0.627	0.042	0.253	0.181
Namibia	0.453	0.212	0.555	0.005	0.306	0.265
Nepal	0.198	0.356	0.599	0.104	0.314	0.279
Netherlands	0.676	0.369	0.431	0.003	0.370	0.367
New Zealand	0.259	0.294	0.572	0.043	0.292	0.243
Nicaragua	0.502	0.446	0.521	0.204	0.418	0.445
Niger	0.288	0.330	0.699	0.001	0.330	0.303
Nigeria	0.305	0.337	0.949	0.002	0.398	0.413
Norway	0.324	0.144	0.651	0.001	0.280	0.224
Oman	0.360	0.198	0.809	0.027	0.348	0.333
Pakistan	0.145	0.516	0.505	0.037	0.300	0.257
Panama	0.687	0.157	0.485	0.004	0.333	0.309
Papua New Guinea	0.521	0.538	0.564	0.010	0.408	0.429
Paraguay	0.507	0.201	0.651	0.004	0.341	0.321
Peru	0.216	0.291	0.498	0.017	0.255	0.184
Philippines	0.283	0.336	0.457	0.028	0.276	0.217
Poland	0.403	0.208	0.563	0.000	0.293	0.245
Portugal	0.328	0.318	0.437	0.011	0.274	0.213
Qatar	0.336	0.076	0.895	0.000	0.327	0.298
Romania	0.350	0.200	0.518	0.000	0.267	0.203
Russia	0.247	0.174	0.709	0.003	0.284	0.229
Rwanda	0.186	0.253	0.684	0.000	0.281	0.225
St Kitts & Nevis	0.393	0.260	0.657	0.512	0.456	0.505
St Lucia	0.530	1.000	0.720	0.810	0.765	1.000

(continued)

Countries	OPN	DSI	EXC	DST	EVI	EVI RS
St Vincent/Grenadines	0.414	0.328	0.668	0.077	0.372	0.370
Samoa	0.346	0.481	0.744	1.000	0.643	0.804
São Tomé & Príncipe	0.281	0.485	0.691	0.000	0.364	0.359
Saudi Arabia	0.399	0.148	0.938	0.002	0.372	0.370
Senegal	0.305	0.587	0.425	0.002	0.330	0.304
Serbia	0.408	0.260	0.396	0.001	0.266	0.202
Seychelles	1.000	0.535	0.731	0.009	0.569	0.686
Sierra Leone	0.236	0.742	0.520	0.000	0.375	0.375
Singapore	1.000	0.356	0.596	0.000	0.488	0.557
Slovak Republic	0.737	0.215	0.704	0.006	0.415	0.441
Slovenia	0.621	0.217	0.508	0.003	0.337	0.315
Solomon Islands	0.483	0.463	0.722	0.033	0.425	0.456
South Africa	0.259	0.255	0.508	0.007	0.257	0.187
Spain	0.252	0.333	0.448	0.018	0.263	0.197
Sri Lanka	0.225	0.392	0.375	0.026	0.254	0.183
Sudan	0.137	0.277	0.842	0.005	0.315	0.280
Suriname	0.423	0.370	0.290	0.000	0.271	0.209
Swaziland	0.692	0.280	0.600	0.015	0.397	0.411
Sweden	0.438	0.245	0.450	0.002	0.284	0.230
Switzerland	0.401	0.136	0.461	0.006	0.251	0.177
Syria	0.258	0.362	0.676	0.000	0.324	0.294
Taiwan	0.574	0.293	0.655	0.000	0.381	0.385
Tajikistan	0.422	0.373	0.600	0.411	0.451	0.498
Tanzania	0.307	0.370	0.534	0.000	0.303	0.260
Thailand	0.537	0.268	0.528	0.041	0.343	0.325
Togo	0.448	0.397	0.481	0.000	0.332	0.306
Tonga	0.352	0.532	0.492	0.145	0.380	0.384
Trinidad & Tobago	0.391	0.523	0.751	0.001	0.417	0.442
Tunisia	0.447	0.256	0.399	0.007	0.277	0.219
Turkey	0.235	0.183	0.555	0.024	0.249	0.174
Turkmenistan	0.564	0.079	0.909	0.004	0.389	0.398
Uganda	0.238	0.302	0.577	0.004	0.280	0.224
Ukraine	0.473	0.490	0.489	0.005	0.364	0.359
United Arab Emirates	0.616	0.138	0.756	0.000	0.377	0.379
United Kingdom	0.293	0.235	0.379	0.005	0.228	0.140
United States	0.121	0.268	0.380	0.015	0.196	0.089
Uruguay	0.251	0.365	0.664	0.003	0.321	0.289
Uzbekistan	0.307	0.176	0.511	0.001	0.249	0.173
Vanuatu	0.504	0.233	0.857	0.365	0.490	0.560
Venezuela	0.198	0.228	0.948	0.008	0.346	0.329
Vietnam	0.657	0.213	0.399	0.051	0.330	0.304
Yemen	0.272	0.639	0.901	0.048	0.465	0.520
Zambia	0.321	0.173	0.849	0.002	0.336	0.314
Zimbabwe	0.530	0.345	0.590	0.012	0.369	0.366

Legend of column headings:

OPN = trade openness

DSI = dependence on strategic imports

EVI = economic vulnerability index

EXN = export concentration

DST = disaster proneness

EVI RS = rescaled economic vulnerability index

2.1b Sources of the EVI data

The data for the indices described below were rescaled using the max–min formula, as explained in endnote 2.

In all, 183 countries were included in the analysis, as shown in Appendix 2.1a. Cuba, Kosovo, Palau, San Marino, Somalia, South Sudan and Timor-Leste are not included in the analysis because of missing data relating to many of the components of the EVI and ERI.

2.1b(i) Trade openness (OPN)

In the present study, trade openness is measured by the average of exports and imports of goods and services as a percentage of GDP. The source of the data was the UNCTAD database, available at: <http://unctadstat.unctad.org/TableViewer/tableView.aspx?ReportId=95>. The data were averaged over three years, 2009–2011. For a few countries, namely Hong Kong, Liberia, Luxembourg, Seychelles and Singapore, the ratio was capped at 120 per cent, to reduce the distorting effects of outliers when applied to the max–min formula (as indicated in endnote 2).

2.1b(ii) Export concentration (EXN)

The ‘export concentration’ index is measured by the sum of the three broad groups of exports of goods and services, which together take the highest percentage of total exports of goods and services. This was then expressed as a percentage of total exports of goods and services. The procedure used was to group exports into 14 categories, of which there were 10 broad groups of merchandise, as per SITC one-digit classification, and the remaining four were services grouped under the headings of transport, travel, financial services and other services. The source of the data was the UNCTAD, available at: <http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx>, under the heading ‘International trade in goods and services’. The data were averaged over three years, 2009–2011.

2.1b(iii) Dependence on strategic imports (DSI)

The ‘dependence on strategic imports’ index is measured by the imports of food and fuel as a percentage of total merchandise imports. The source of the data was the UNCTAD database, available at: unctadstat.unctad.org/ReportFolders/reportFolders.aspx, under the heading ‘International trade in goods and services’. The variables were averaged over three years, 2009–2011.

2.1b(iv) Proneness to natural disasters (DST)

The disaster proneness index was measured in terms of economic damage relative to GDP. The source of the data was the EM-DAT Database, available at: www.emdat.be/database, covering a period of about three decades (1980–2011).

2.1b(v) The vulnerability index (EVI and EVI RS)

The EVI was computed as a weighted average of the four components described above. The weighting scheme is explained in the main body of this study, also shown

as Weighting Scheme 1 in the following table. EVI RS shown in Appendix 2.1a means that the EVI was rescaled again to present the results within the range of 0 to 1.

Other weighting schemes were tested to examine how different weights affect the index. The different weighting schemes used are presented in the following table.

Table A2.1.2 Alternative EVI weighting schemes

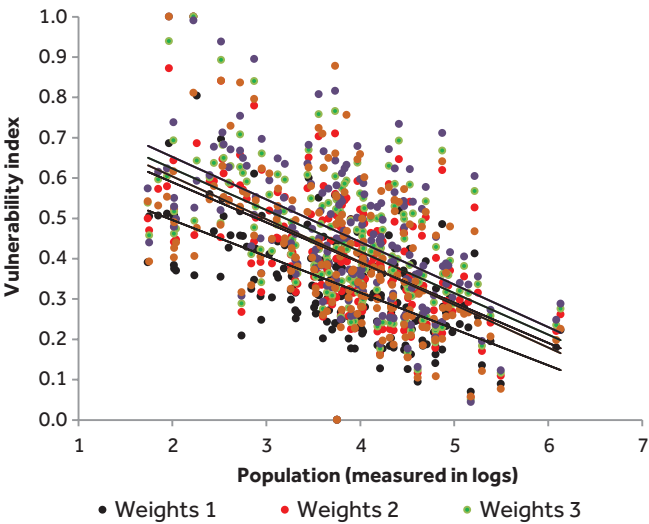
Index	Weighting schemes				
	1	2	3	4	5
Trade openness	0.250	0.300	0.317	0.333	0.500
Export concentration	0.250	0.300	0.317	0.333	0.250
Dependence on strategic imports	0.250	0.300	0.317	0.333	0.250
Proneness to natural disasters	0.250	0.100	0.050	0.000	0.000
Total	1.00	1.00	1.00	1.00	1.00

The different weighting schemes produced different EVIs, but in all cases there was a tendency for small states to exhibit higher vulnerability scores, as indicated by the fitted lines shown in Figure A2.1.1. Each fitted line shows the relationship between country size (measured by the log of the population size) and economic vulnerability.

Weighting Scheme 1:	$EVI_1 = .6763 - .0901 P$	$R^2 = .3469$
Weighting Scheme 2:	$EVI_2 = .7887 - .0996 P$	$R^2 = .3271$
Weighting Scheme 3:	$EVI_3 = .8293 - .1030 P$	$R^2 = .3144$
Weighting Scheme 4:	$EVI_4 = .8634 - .1055 P$	$R^2 = .3001$
Weighting Scheme 5:	$EVI_5 = .8160 - .1061 P$	$R^2 = .3022$

where P is the log of the population size.

Figure A2.1.1 Fitted EVI lines derived from five different weighting schemes



Appendix 2.2 Data for the economic resilience index

2.2a The economic resilience index and its components

(See legend for column headings at the end of the table)

Country	STB	MFX	FNR	GVN	SOC	ENV	ERIRS	Rescaled
Afghanistan	0.616	0.153	0.676	0.000	0.119	0.120	0.315	0.240
Albania	0.548	0.438	0.426	0.414	0.743	0.792	0.505	0.494
Algeria	0.685	0.264	0.506	0.223	0.663	0.461	0.448	0.418
Angola	0.325	0.089	0.500	0.188	0.248	0.442	0.252	0.156
Antigua & Barbuda	0.408	0.686	0.811	0.705	0.696	0.542	0.599	0.619
Argentina	0.413	0.279	0.677	0.393	0.803	0.613	0.430	0.394
Armenia	0.619	0.502	0.639	0.404	0.744	0.440	0.540	0.541
Australia	0.680	0.751	0.934	0.928	1.000	0.615	0.788	0.873
Austria	0.632	0.572	0.698	0.901	0.894	0.851	0.709	0.767
Azerbaijan	0.681	0.528	0.627	0.246	0.702	0.357	0.524	0.520
Bahamas	0.632	1.000	0.977	0.732	0.697	0.527	0.772	0.851
Bahrain	0.688	0.919	0.838	0.470	0.741	0.356	0.694	0.747
Bangladesh	0.631	0.453	0.569	0.234	0.382	0.346	0.463	0.439
Barbados	0.579	0.635	0.850	0.801	0.821	0.377	0.667	0.710
Belarus	0.233	0.608	0.139	0.216	0.776	0.563	0.363	0.305
Belgium	0.551	0.665	0.644	0.851	0.908	0.738	0.684	0.733
Belize	0.513	0.773	0.660	0.449	0.682	0.687	0.593	0.612
Benin	0.630	0.348	0.669	0.386	0.218	0.496	0.478	0.458
Bhutan	0.459	0.241	0.523	0.510	0.303	0.518	0.415	0.374
Bolivia	0.589	0.138	0.591	0.316	0.641	0.576	0.418	0.377
Bosnia & Herzegovina	0.596	0.428	0.518	0.372	0.713	0.235	0.484	0.466
Botswana	0.662	0.656	0.767	0.669	0.429	0.560	0.652	0.690
Brazil	0.510	0.086	0.911	0.498	0.663	0.697	0.454	0.426
Brunei Darussalam	1.000	0.846	0.651	0.670	0.780	0.728	0.831	0.931
Bulgaria	0.595	0.587	0.493	0.527	0.771	0.609	0.580	0.594
Burkina Faso	0.630	0.597	0.643	0.370	0.026	0.132	0.504	0.493
Burundi	0.301	0.539	0.487	0.138	0.163	0.229	0.328	0.257
Cambodia	0.617	0.498	0.565	0.250	0.425	0.590	0.489	0.473
Cameroon	0.699	0.490	0.693	0.216	0.307	0.354	0.498	0.484
Canada	0.576	0.846	0.913	0.928	0.934	0.650	0.773	0.853
Cape Verde	0.479	0.410	0.597	0.621	0.458	0.157	0.483	0.465
Central African Rep.	0.544	0.192	0.623	0.111	0.106	0.395	0.333	0.264
Chad	0.569	0.188	0.729	0.106	0.017	0.221	0.335	0.267
Chile	0.702	0.562	0.780	0.811	0.827	0.591	0.698	0.752
China	0.715	0.386	0.548	0.320	0.623	0.340	0.505	0.494
Colombia	0.614	0.474	0.704	0.386	0.659	0.725	0.544	0.546

(continued)

Country	STB	MFX	FNR	GVN	SOC	ENV	ERI RS	Rescaled
Comoros	0.553	0.166	0.502	0.204	0.256	0.190	0.336	0.268
Congo, Democratic Rep.	0.182	0.361	0.627	0.010	0.137	0.441	0.237	0.136
Congo, Republic	0.442	0.418	0.717	0.180	0.359	0.435	0.395	0.347
Costa Rica	0.546	0.503	0.719	0.644	0.757	0.853	0.600	0.621
Côte d'Ivoire	0.591	0.312	0.713	0.162	0.193	0.557	0.412	0.370
Croatia	0.628	0.436	0.606	0.585	0.787	0.760	0.584	0.600
Cyprus	0.542	0.527	0.570	0.779	0.835	0.626	0.614	0.640
Czech Republic	0.688	0.556	0.763	0.727	0.902	0.772	0.686	0.736
Denmark	0.698	0.778	0.707	0.985	0.918	0.749	0.797	0.885
Djibouti	0.580	0.120	0.000	0.297	0.176	0.070	0.302	0.223
Dominica	0.464	0.638	0.980	0.681	0.690	0.633	0.619	0.646
Dominican Republic	0.511	0.455	0.719	0.371	0.621	0.535	0.490	0.474
Ecuador	0.644	0.191	0.640	0.260	0.690	0.691	0.450	0.420
Egypt	0.434	0.333	0.607	0.284	0.585	0.588	0.407	0.363
El Salvador	0.617	0.352	0.863	0.446	0.616	0.529	0.528	0.525
Equatorial Guinea	0.469	0.146	0.650	0.124	0.224	0.436	0.311	0.235
Eritrea	0.163	0.039	0.367	0.077	0.158	0.266	0.136	0.000
Estonia	0.675	0.603	0.725	0.766	0.869	0.605	0.688	0.739
Ethiopia	0.370	0.614	0.604	0.211	0.168	0.540	0.413	0.372
Fiji	0.548	0.957	0.682	0.297	0.723	0.412	0.608	0.632
Finland	0.695	0.612	0.943	1.000	0.900	0.765	0.778	0.859
France	0.594	0.530	0.772	0.817	0.911	0.853	0.674	0.720
Gabon	0.673	0.704	0.720	0.331	0.531	0.640	0.599	0.619
Gambia	0.375	0.689	0.763	0.329	0.203	0.205	0.454	0.427
Georgia	0.531	0.723	0.558	0.485	0.799	0.620	0.590	0.608
Germany	0.655	0.533	0.653	0.879	0.954	0.813	0.699	0.754
Ghana	0.359	0.493	0.790	0.502	0.494	0.441	0.472	0.450
Greece	0.402	0.295	0.478	0.566	0.881	0.681	0.460	0.434
Grenada	0.383	0.563	0.811	0.585	0.773	0.501	0.535	0.534
Guatemala	0.635	0.307	0.745	0.308	0.425	0.525	0.472	0.450
Guinea	0.191	0.055	0.720	0.133	0.082	0.280	0.185	0.066
Guinea-Bissau	0.369	0.302	0.661	0.164	0.088	0.388	0.315	0.239
Guyana	0.422	0.653	0.649	0.367	0.584	0.427	0.494	0.479
Haiti	0.493	0.563	0.539	0.149	0.312	0.319	0.418	0.378
Honduras	0.555	0.390	0.699	0.305	0.573	0.537	0.470	0.447
Hong Kong SAR	0.789	0.998	0.919	0.874	0.892	0.897	0.883	1.000
Hungary	0.538	0.573	0.641	0.669	0.843	0.625	0.606	0.629
Iceland	0.480	0.808	0.396	0.885	0.947	0.801	0.688	0.739
India	0.502	0.569	0.822	0.384	0.393	0.225	0.497	0.484
Indonesia	0.555	0.326	0.698	0.351	0.537	0.532	0.462	0.436
Iran, Islamic Republic	0.519	0.281	0.590	0.152	0.685	0.349	0.383	0.331
Iraq	0.318	0.161	0.659	0.090	0.463	0.016	0.248	0.150
Ireland	0.654	0.770	0.206	0.879	0.971	0.655	0.713	0.772
Israel	0.593	0.453	0.787	0.646	0.944	0.577	0.604	0.627
Italy	0.491	0.485	0.559	0.616	0.900	0.851	0.565	0.575
Jamaica	0.239	0.614	0.786	0.471	0.720	0.572	0.475	0.454

(continued)

Country	STB	MFX	FNR	GVN	SOC	ENV	ERI RS	Rescaled
Japan	0.361	0.746	0.662	0.823	0.945	0.744	0.639	0.673
Jordan	0.453	0.775	0.708	0.449	0.681	0.338	0.560	0.568
Kazakhstan	0.540	0.576	0.457	0.310	0.714	0.162	0.479	0.460
Kenya	0.522	0.566	0.674	0.279	0.410	0.475	0.483	0.464
Kiribati	0.651	0.385	0.507	0.478	0.582	0.449	0.518	0.512
Korea	0.713	0.380	0.527	0.688	0.956	0.627	0.617	0.644
Kuwait	0.850	0.617	0.635	0.498	0.628	0.212	0.648	0.685
Kyrgyz Republic	0.431	0.489	0.551	0.239	0.637	0.418	0.424	0.385
Lao PDR	0.390	0.137	0.698	0.215	0.406	0.488	0.319	0.246
Latvia	0.576	0.556	0.512	0.653	0.814	0.879	0.613	0.638
Lebanon	0.285	0.601	0.719	0.292	0.675	0.438	0.432	0.396
Lesotho	0.569	0.464	0.644	0.440	0.240	0.009	0.471	0.449
Liberia	0.000	0.203	0.625	0.260	0.281	0.229	0.187	0.069
Libya	0.772	0.006	0.640	0.119	0.718	0.253	0.392	0.343
Lithuania	0.639	0.621	0.644	0.681	0.805	0.786	0.661	0.703
Luxembourg	0.772	0.574	0.879	0.960	0.818	0.856	0.780	0.862
Macedonia, FYR	0.646	0.681	0.647	0.449	0.698	0.430	0.602	0.623
Madagascar	0.437	0.338	0.638	0.265	0.433	0.284	0.380	0.327
Malawi	0.380	0.529	0.786	0.382	0.265	0.440	0.451	0.422
Malaysia	0.711	0.727	0.775	0.567	0.718	0.728	0.689	0.741
Maldives	0.488	0.883	0.201	0.379	0.603	0.188	0.527	0.524
Mali	0.599	0.343	0.570	0.309	0.068	0.137	0.412	0.370
Malta	0.570	0.495	0.868	0.806	0.846	0.460	0.637	0.671
Marshall Islands	0.543	0.432	0.793	0.455	0.608	0.243	0.502	0.491
Mauritania	0.196	0.462	0.449	0.232	0.240	0.000	0.283	0.197
Mauritius	0.558	0.707	0.828	0.702	0.650	0.586	0.654	0.693
Mexico	0.604	0.404	0.776	0.431	0.739	0.471	0.530	0.527
Micronesia	0.607	0.234	0.746	0.491	0.611	0.124	0.472	0.450
Moldova	0.503	0.372	0.505	0.385	0.650	0.397	0.446	0.416
Mongolia	0.437	0.557	0.388	0.418	0.650	0.400	0.468	0.445
Montenegro	0.458	0.611	0.608	0.505	0.806	0.683	0.549	0.553
Morocco	0.623	0.336	0.673	0.392	0.444	0.407	0.482	0.463
Mozambique	0.435	0.140	0.637	0.385	0.021	0.447	0.344	0.279
Myanmar	0.417	0.125	0.757	0.025	0.335	0.541	0.287	0.203
Namibia	0.683	0.623	0.801	0.567	0.448	0.502	0.629	0.660
Nepal	0.570	0.373	0.493	0.224	0.320	0.641	0.427	0.390
Netherlands	0.695	0.651	0.709	0.951	0.951	0.788	0.761	0.836
New Zealand	0.664	0.897	0.893	0.984	0.999	0.796	0.838	0.939
Nicaragua	0.374	0.460	0.619	0.304	0.538	0.665	0.426	0.388
Niger	0.554	0.147	0.537	0.288	0.000	0.027	0.333	0.264
Nigeria	0.610	0.505	0.620	0.153	0.252	0.300	0.446	0.415
Norway	0.698	0.454	0.912	0.968	0.997	0.870	0.741	0.809
Oman	0.691	0.847	0.840	0.520	0.573	0.374	0.680	0.728
Pakistan	0.451	0.351	0.696	0.150	0.333	0.289	0.364	0.306
Panama	0.589	0.389	0.785	0.499	0.747	0.641	0.547	0.550
Papua New Guinea	0.630	0.874	0.491	0.287	0.227	0.294	0.560	0.568
Paraguay	0.616	0.285	0.684	0.298	0.627	0.535	0.464	0.439
Peru	0.669	0.556	0.765	0.410	0.701	0.494	0.583	0.599
Philippines	0.634	0.443	0.747	0.344	0.616	0.630	0.530	0.527
Poland	0.613	0.582	0.726	0.704	0.809	0.747	0.653	0.692

(continued)

Country	STB	MFX	FNR	GVN	SOC	ENV	ERI RS	Rescaled
Portugal	0.527	0.379	0.574	0.736	0.783	0.635	0.560	0.568
Qatar	0.737	0.872	0.862	0.663	0.674	0.423	0.743	0.813
Romania	0.518	0.547	0.577	0.506	0.786	0.457	0.539	0.539
Russia	0.588	0.345	0.465	0.268	0.754	0.401	0.444	0.413
Rwanda	0.498	0.847	0.692	0.410	0.245	0.342	0.563	0.571
St Kitts and Nevis	0.257	0.506	0.659	0.715	0.675	0.457	0.487	0.470
St Lucia	0.270	0.713	0.795	0.712	0.683	0.660	0.565	0.575
St Vincent/ Grenadines	0.351	0.608	0.677	0.711	0.682	0.539	0.549	0.553
Samoa	0.595	0.692	0.661	0.564	0.731	0.226	0.604	0.626
São Tomé & Príncipe	0.056	0.104	0.065	0.357	0.399	0.247	0.163	0.037
Saudi Arabia	0.690	0.857	0.802	0.378	0.692	0.488	0.660	0.702
Senegal	0.448	0.216	0.694	0.376	0.282	0.426	0.384	0.332
Serbia	0.578	0.336	0.486	0.435	0.766	0.197	0.467	0.443
Seychelles	0.357	0.485	0.691	0.526	0.744	0.680	0.492	0.476
Sierra Leone	0.474	0.476	0.715	0.281	0.100	0.238	0.419	0.379
Singapore	0.609	0.876	0.946	0.901	0.852	0.610	0.782	0.865
Slovak Republic	0.571	0.554	0.705	0.686	0.840	0.807	0.631	0.663
Slovenia	0.677	0.464	0.460	0.731	0.936	0.723	0.635	0.667
Solomon Islands	0.481	0.556	0.744	0.349	0.388	0.291	0.475	0.454
South Africa	0.643	0.504	1.000	0.542	0.438	0.193	0.579	0.593
Spain	0.596	0.400	0.488	0.721	0.909	0.686	0.588	0.605
Sri Lanka	0.542	0.510	0.803	0.378	0.720	0.598	0.532	0.531
Sudan	0.298	0.259	0.540	0.025	0.139	0.412	0.245	0.146
Suriname	0.561	0.525	0.670	0.443	0.596	0.571	0.535	0.534
Swaziland	0.610	0.659	0.698	0.312	0.303	0.244	0.525	0.521
Sweden	0.727	0.639	0.893	0.983	0.942	0.849	0.794	0.881
Switzerland	0.728	0.848	0.830	0.960	0.922	1.000	0.844	0.947
Syria	0.538	0.400	0.101	0.132	0.570	0.350	0.368	0.311
Taiwan	0.794	0.468	0.698	0.748	0.956	0.723	0.699	0.754
Tajikistan	0.381	0.375	0.315	0.161	0.626	0.274	0.333	0.264
Tanzania	0.509	0.393	0.663	0.360	0.317	0.570	0.452	0.424
Thailand	0.662	0.400	0.717	0.392	0.605	0.680	0.539	0.539
Togo	0.509	0.223	0.424	0.223	0.342	0.463	0.355	0.293
Tonga	0.570	0.690	0.803	0.482	0.743	0.430	0.601	0.622
Trinidad & Tobago	0.724	0.591	0.745	0.509	0.646	0.432	0.624	0.653
Tunisia	0.598	0.617	0.640	0.414	0.650	0.425	0.558	0.566
Turkey	0.494	0.371	0.750	0.461	0.612	0.389	0.478	0.458
Turkmenistan	0.585	0.203	0.367	0.089	0.622	0.139	0.338	0.271
Uganda	0.498	0.725	0.746	0.313	0.296	0.341	0.514	0.506
Ukraine	0.461	0.264	0.249	0.318	0.749	0.418	0.376	0.322
United Arab Emirates	0.723	0.863	0.769	0.615	0.706	0.506	0.725	0.788
United Kingdom	0.612	0.802	0.530	0.860	0.861	0.849	0.734	0.801
United States	0.544	0.851	0.673	0.826	0.969	0.615	0.722	0.784
Uruguay	0.494	0.500	0.743	0.698	0.775	0.624	0.584	0.600
Uzbekistan	0.469	0.157	0.367	0.116	0.640	0.148	0.295	0.214
Vanuatu	0.660	0.604	0.948	0.541	0.539	0.335	0.617	0.643
Venezuela	0.343	0.000	0.640	0.119	0.692	0.596	0.266	0.174

(continued)

Country	STB	MFX	FNR	GVN	SOC	ENV	ERI RS	Rescaled
Vietnam	0.489	0.282	0.407	0.323	0.560	0.501	0.398	0.351
Yemen	0.468	0.321	0.603	0.098	0.242	0.211	0.333	0.265
Zambia	0.494	0.476	0.810	0.395	0.252	0.595	0.486	0.469
Zimbabwe	0.414	0.179	0.638	0.064	0.330	0.542	0.298	0.218

Legend of column headings:

STB = macroeconomic stability

MFX = market flexibility

FNR = financial riskiness

SOC = social development

ENV = environmental management

POP = population size measured in logs

ERI = economic resilience index

ERI RS = rescaled economic resilience index

2.2b Sources of the ERI data

The data for the indices described below were rescaled using the max–min formula, as explained in endnote 2. In the case of inflation and the debt/GDP ratio, the formula was subtracted from 1, as these variables are undesirables with regard to economic stability.

In all, 183 countries were included in the analysis, as shown in Appendix 2.1a. Cuba, Kosovo, Palau, San Marino, Somalia, South Sudan and Timor-Leste are not included in the analysis because of missing data relating to many of the components of the EVI and ERI.

2.2b(i) Macroeconomic stability (STB)

The ‘macroeconomic stability’ component of the resilience index (STB) is composed of three variables, namely (i) government debt as a percentage of GDP; (ii) inflation measured by the GDP deflator; and (iii) current account balance, equally weighted. The raw data were mostly sourced from the IMF World Economic Outlook Database, available at: www.imf.org/external/pubs/ft/weo/2013/02/weodata/index.aspx.⁸⁸

The data were averaged over a ten-year period (2003–2012), to reduce the effects of cyclical fluctuations.

2.2b(ii) Market flexibility (MFX)

The raw data were sourced from the (a) labour market regulations and (b) business regulations forming part of the ‘regulation’ major area of the Economic Freedom of the World Index (EFWI), available at: www.freetheworld.com/2013/EFWdataset2013.xls. The two indices were averaged, covering a period of three years (2010–12).

Data were available for 152 countries. Data for the remaining 31 countries⁸⁹ were obtained as follows. The EFWI regulation component draws heavily on the World Bank’s Doing Business Index (DBI), and it was therefore decided to fill in the data gaps by multiplying the DBI scores for the countries with missing data by a ratio aimed at transforming the DBI scores into ‘market flexibility’ scores. The ratio was calculated as follows: the gap between a country’s actual DBI score and the highest DBI score was expressed as a ratio of the range of the DB ranking scores (totalling

189). This ratio was then multiplied by the gap between the lowest (3.65) and the highest (8.86) 'market flexibility' scores. The result for each country was added to the lowest 'market flexibility' score (3.65). The DBI data were sourced from www.doingbusiness.org/rankings.

2.2b(iii) Financial riskiness (FNR)

The 'financial riskiness' (FNR) index is composed of (a) 'lack of financial prudence' weighted by (b) the 'importance of the financial sector'.

Lack of financial prudence

To measure 'lack of financial prudence' two indices derived from the Global Competitiveness Indicators (GCI) were used. These were 'soundness of banks' and 'regulation of securities exchanges'. The data was derived from the Executive Opinion Survey of the World Economic Forum. The data were averaged for five years, as from 2008–09 to 2013–14, and are available at: www.weforum.org/issues/competitiveness-0/gci2012-data-platform. The indicators included in the Global Competitiveness Indicators (GCI) are measured along a seven-point scale. Given that the indicators used in this study convey opposite condition, a score of, say, 5 on the 'soundness of banks' was assigned a score of 2 on the 'unsoundness of banks' index. The same applies to the 'lack of regulation of securities exchanges' index.

The GCI do not cover all the 183 countries included in the resilience index.⁹⁰ The missing country data was filled in using a ratio method, utilising the World Bank's 'strength of legal rights' index.⁹¹ The 'strength of legal rights' index measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending, with higher scores indicating that these laws are better designed to expand access to credit. The data was averaged over 2008 to 2012. The procedure used to obtain the missing country data for the 'financial prudence' index was to divide the missing country data on 'strength of legal rights' by 10 and multiply the result by 7. The reason for this is that the 'financial prudence' index is constructed on a seven-point scale, while the 'strength of legal rights' index is constructed on a ten-point scale.

Importance of the financial sector

The 'lack of financial prudence' index was weighted by another index that measures the 'depth of the financial sector' in an economy. This was measured by the 'bank private credit to GDP (%)' index, available at: siteresources.worldbank.org/EXTGLOBALFINREPORT/Resources/8816096-1346865433023/8827078-1347152290218/GFDD_V16_April_2013_20130404.xlsx

This index relates to the financial resources provided to the private sector by domestic banks and other financial institutions. The data was averaged over four years, 2008 to 2011.

This index also had some missing data for the following countries. Eritrea, Kiribati, Kyrgyz Republic, Marshall Islands, Micronesia, Norway, Rwanda, Taiwan, Tajikistan, Turkmenistan, Uzbekistan and Zimbabwe. Data for these countries were approximated with reference to official literature on the countries and comparator countries.

The 'bank private credit to GDP (%)' was measured in logs to allow for the diminishing marginal effect of the size of the financial sector, which is used as a weight for the 'trustworthiness and confidence' index.

The resultant product of the 'lack of financial prudence' and the 'financial depth' indices was rescaled using the max–min index to construct a 'financial riskiness' index.

2.2b(iv) The adjusted market flexibility index (AMFX)

The AMFX is a combination of (a) the 'market flexibility' index in the labour and goods markets (MFX) with a weight of 75 per cent and (b) 1-FNR, which is labelled the 'financial safety' index as the obverse of the 'financial riskiness' index, given that the latter index has a value of between 0 and 1.

2.2b(v) Political governance

To construct the governance index (GVN), the Worldwide Governance Indicators database – published by the World Bank – was utilised.⁹² The indicators have six dimensions of governance, namely (i) voice and accountability; (ii) political stability and absence of violence; (iii) government effectiveness; (iv) regulatory quality; (v) rule of law; and (vi) control of corruption. The WGI assigns scores of approximately –2.5 to 2.5, with higher values corresponding to better governance. A detailed description of the methodology is given in Kaufmann et al. (2010).

The data used for the purpose of the study presented in this chapter was averaged over the six dimensions of the WGI indicators and again averaged over three years (2009 to 2011). The data was rescaled using the max–min approach to render the data comparable across sources.

2.2b(vi) Social development (SOC)

The social development index was sourced from the non-income components of the Human Development Index, which relate to education and health. Education is measured by (a) mean years of schooling and (b) expected years of schooling, while health is measured by life expectancy at birth. The data covered three years (2010 to 2012).⁹³

The only missing data observation pertained to Taiwan. It was decided not to exclude this country from the analysis because of one missing data point, and the score to Taiwan was assumed to be similar to that of South Korea.

2.2b(vii) Environment management (ENV)

The environmental management (ENV) index was based on the environment performance index (EPI), available at: epi.yale.edu. The 2012 EPI ranks 132 countries

in terms of two broad policy objectives, namely (i) environmental health (EH), which measures environmental stresses to human health, covering the first three policy categories; and (ii) ecosystem vitality (EV), which measures ecosystem health and natural resource management, covering the remaining seven policy categories. The EH objective was given a weight of 30 per cent, while the EV objective was given a weight of 70 per cent.

The EPI excludes a number of countries, mostly small states. In order to fill the data gaps, the regression method was used to determine which variables systematically related to the 'environmental health' (EH) index and the 'ecosystem vitality' (EV) index for the countries for which data was available.

The estimated EH index for countries with missing data

In the case of the EH index, there were 12 out of 183 countries with missing data.⁹⁴ The 'least squares' multiple regression method was applied to the 171 countries with available data to extrapolate the scores for countries with missing data. The available values of the EH index were used as dependent variables, and four variables were used as relevant explanatory variables, namely (i) GDP per capita, based on the assumption that environmental management with regard to health effects becomes more affordable as countries develop;⁹⁵ (ii) primary production as a ratio of GDP;⁹⁶ based on the assumption that such dependence has negative impacts on the environment and therefore on health; (iii) government effectiveness,⁹⁷ based on the assumption that such effectiveness is conducive to environmental health; and (iv) child mortality, as this was one of the variables used to construct the EPI-EH index, which was also available for most countries with missing data. The results indicated that the estimates of the equation coefficients were highly statistically significant at the 95 per cent level. The correlation coefficient R^2 was 0.934.

The estimated EH equation was as follows:

$$\begin{aligned} \text{EH} &= 16.054 + 0.310 \text{ GC} + 2.509 \text{ GE} + 0.688 \text{ CM} - 0.146 \text{ AD} \\ t \text{ stats: } & 5.84 \quad 4.89 \quad 2.48 \quad 19.91 \quad -2.44 \\ R^2 &= 0.934; N = 171 \text{ countries} \end{aligned}$$

where EH is the 'environmental health' index; GC is GDP per capita in US dollars (thousands); AD is agriculture dependence, measured as a ratio of GDP; GE is government effectiveness, measured as an index between -2.5 and +2.5; and CM is child mortality.

Data for the explanatory variables were available for the 12 countries with the missing EH scores,⁹⁸ and the estimated coefficients were then used to estimate the EH index for these 12 countries.

The estimated EV index for countries with missing data

The procedure was repeated to estimate the missing values of EV index. There were 51 out of 183 countries with missing data.⁹⁹ The least squares multiple regression method was applied to the 132 countries with available data to extrapolate the scores

of countries with missing data. This time the explanatory variables that were found to be relevant and statistically significant were the following: (i) OP, which stands for production of oil as a ratio of land area (measured in logs to allow for diminishing marginal effect), on the assumption that oil production is detrimental to ecosystem health and natural resource management;¹⁰⁰ and (ii) BP, which stands for biome protection, is a component of the EPI-EV index and is available for countries with missing data. In addition, the EPI-EV index for the countries with available data included two dummy variables (with values of 1 if yes and 0 if no), which were also available for countries with missing data. These were (i) NF, which stands for lack of forests (because the forests variable is not relevant for countries with less than 100 km² of forestland) and (ii) NE, which stands for minimal use of electricity (because, for countries that generate less than 130 kWh of electricity annually, renewable electricity usage is not relevant in the climate change policy variable).¹⁰¹

The results indicated that the estimates of the equation coefficients were statistically significant at the 95 per cent level.

The estimated EV Index equation was as follows:

$$\text{EV} = 36.05 - 1.294 \text{ OP} + 0.197 \text{ BP} - 12.898 \text{ NF} + 8.822 \text{ NE}$$

$$t \text{ stats: } 23.576 \quad -2.537 \quad 9.991 \quad -6.265 \quad 3.816$$

$$R^2 = 0.654; N = 132 \text{ countries.}$$

Data for the explanatory variables were available for the 51 countries with the missing data, and the estimated coefficients were used to estimate the EV scores for these countries.

The ENV index

The values of EH and EV, including the estimated scores for the countries with missing data, were then respectively multiplied by 0.3 and 0.7, which are the weights specified by the authors of the EPI for these components, to produce EPI scores. These were then rescaled using the max–min formula, and used to construct the ENV index for the purpose of this study. The results are shown in Appendix 2.2a.

2.2b(viii) The economic resilience index (ERI and ERI RS)

The ERI was computed by multiplying the rescaled components by a weighting scheme explained in the main body of this study, shown as Weighting Scheme 1 in Table A2.2.2.

Other weighting schemes were tested to assess how different weights affect the index, as shown in the following table. It should be noted that Weighting Scheme 4 is the same as used by Briguglio et al. (2009).

As expected, the weighting schemes produced different ERIs. However, in all cases the fitted line between the ERI and population size had a negative gradient, but there was no significant relationship between the ERIs and the size of countries shown

Table A2.2.2 Alternative ERI weighting schemes

Index	Weighting schemes				
	1	2	3	4	5
Macroeconomic stability	0.333	0.250	0.333	0.250	0.167
Market flexibility (adjusted)	0.333	0.250	0.333	0.250	0.333
Market flexibility	0.250	0.200	0.222	0.250	0.167
Financial riskiness	0.083	0.050	0.111	0.000	0.167
Governance	0.333	0.500	0.333	0.500	0.500
Political governance	0.222	0.250	0.222	0.250	0.167
Social development	0.056	0.125	0.056	0.250	0.167
Environmental management	0.056	0.125	0.056	0.000	0.167

in the diagram below. As explained in the main body of this chapter, there was an indication that the ERI is correlated with GDP per capita.

Equations for the fitted line:

Weighting Scheme 1:
$$ERI_1 = 0.6511 - 0.0365 P; \quad R^2 = 0.0244$$

Weighting Scheme 2:
$$ERI_2 = 0.6406 - 0.0360 P; \quad R^2 = 0.0211$$

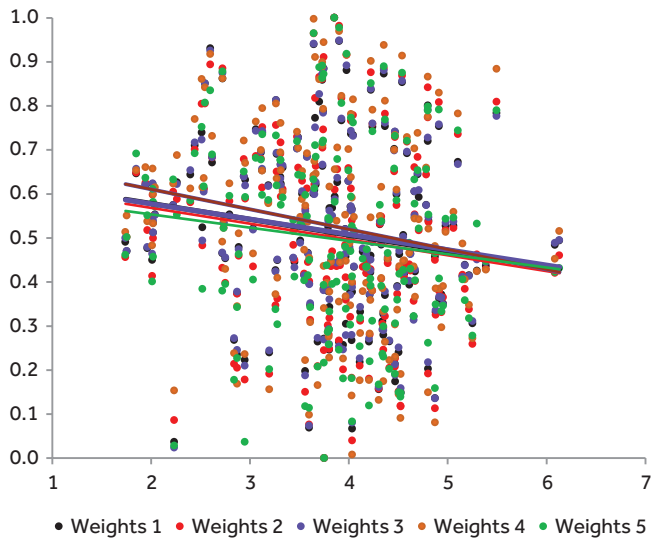
Weighting Scheme 3:
$$ERI_3 = 0.6472 - 0.0348 P; \quad R^2 = 0.0227$$

Weighting Scheme 4:
$$ERI_4 = 0.7016 - 0.0455 P; \quad R^2 = 0.0309$$

Weighting Scheme 5:
$$ERI_4 = 0.6140 - 0.0302 P; \quad R^2 = 0.0015$$

where P is the log of the population size.

Figure A2.2.1 Fitted ERI lines derived from four different weighting schemes



Chapter 3

Developing a Governability Assessment Framework in the Context of Resilience Building in Small States

Jean Paul Fabri

3.1 Introduction

All societies have encountered and still encounter challenges in governing themselves. Recent episodes such as the global economic and financial crisis, as well as the Arab Spring and numerous examples of failed states, clearly show that governing is not an automatic process. Irrespective of country size or the level of development, governing presents real challenges.

These challenges have been emphasised or exacerbated by a number of transformations in contemporary societies. The deepening and widening of globalisation have increased the complexity of policy problems as well as the interdependency of policy actors, levels and areas. The rise of civil society actors in the policy-making process has also increased pressures on governing and the increasing use of social media has increased both public participation and scrutiny.

In view of the above transformations, it can be concluded that the emerging pattern in national and international politics is rules without rulers and governing without government. In a word: governance.

Over recent years, governance has increased in popularity both in academic literature and as a policy prescription. However, as a concept it is broad and means different things to different people. At its most general, governance in the public sector is about steering and control of society and the economy through collective action that aims to achieve common goals and objectives. It is for this reason that it is seen as a cornerstone in increasing a country's ability to adapt and withstand a negative shock. This ability is referred to as resilience (Briguglio et al. 2006).

All countries want to increase their resilience, especially countries that are inherently vulnerable to external shocks. As evidenced by the literature, small states are among the most vulnerable economies and therefore resilience building is a priority for all small states.

Given that governance has been strongly associated with resilience, this chapter seeks to shed more light on the concept. In this study, governance is built on the basis of the interactive governance model which defines governance as 'the whole of public as well as private interactions taken to solve societal problems and create societal opportunities. It includes the formulation and application of principles guiding those interactions and care for institutions that enable them' (Bavinck et al. 2005).

Although interactive governance still has a basic interest in steering the economy and society, it approaches this problem by a different route from that associated with traditional forms of governing analysis. In fact, this study sees governance as being born out of a socio-cultural context and includes both the formal and informal traditional structures.

Given this ecological view of governance, the chapter develops an assessment framework that, besides being holistic in nature, and not solely based on the Western style of government, is able to capture examples of best-fit governance and chart a reform process for countries.

After reviewing the main literature on resilience in section 3.2, the chapter moves to give an overview of the literature of governance in section 3.3. The interactive governance model, which forms the basis of this chapter, and other governance models are described in section 3.4. Moving on, section 3.5 gives an overview of the governability assessment model that is being presented in this study. Sections 3.6 and 3.7 give a detailed analysis of the main components of the assessment framework while section 3.8 illustrates the governance framework using Malta as a case study. Section 3.9 concludes.

3.2 Resilience

Countries today face numerous challenges. Economic globalisation, migration, demographic changes, environmental issues and climate change are placing all countries, no matter their size or wealth, under constant pressure. The recent economic and financial crisis has not only uncovered the high level of interconnectedness between economies and the volatility of the global economy, but underscored the need for effective political capacity to steer policy. It has shown that all countries are vulnerable to global economic shocks in a globalised world. We also know that some countries, particularly small states, are inherently vulnerable to external shocks (Briguglio 1992, 1995, 1997, 2003). What matters in today's world is the strategy and capacity to respond to these adverse shocks. This ability to respond is described by Briguglio et al. (2006) as resilience.

Resilience refers to a country's ability to recover quickly from a negative external shock, a quality to be nurtured. Resilience takes on greater significance in countries that are inherently more exposed to external shocks such as small island states. In this context, it is indeed a pre condition for economic growth and development. By building resilience people, communities and governments will be equipped with the capacity to cope, take action and rise to the challenges of the twenty-first century.

Building resilience is a transformative process that builds on the capacity of individuals, their communities and institutions to lessen the impacts of shocks, internal or external, natural or man-made, economic, health-related, political or social. Briguglio et al. (2006) argue that economic resilience depends upon appropriate policy interventions in four principal areas, namely macroeconomic stability, microeconomic market efficiency, social development and governance. Good environmental management, a concept that was not included in the original index, is also considered a contributor to resilience.

The literature suggests that good governance has an important and central role in building resilience, especially in small island states (Briguglio et al. 2006). Building on these findings, Fabri (2007) found a significant development dividend of good governance where any improvements in governance would lead to a multiplier effect in per capita incomes.

Given the importance of governance in resilience and in economic development, further emphasis on governance is warranted. The analysis of governance will be dealt with in the following section.

3.3 Governance

This section focuses on the concept of governance, starting with a brief literature review and overview of the measurement of governance in the literature. This is followed by a discussion of the issues with current *governance* theoretical models and conceptualisations.

3.3.1 The literature

Governance has become a key concept in policy debates, international fora and the social sciences. However, apart from the universal acceptance of its importance, differences prevail in respect of theoretical formulations, policy prescriptions and conceptualisations of the subject itself. In fact, the term *governance* has different definitions and formulations among researchers and policy planners.

The modern outlook on governance focuses more on the co-ordination issues and the various forms of formal and informal types of public–private interaction, giving particular importance to the role of policy networks (Peters 2000). This distinction is mirrored by Rhodes (1997), who argues that in the state-centric approach, referred to as ‘old’ governance, the main research problem is to capture the extent to which the state has the political and institutional capacity to steer society and how the role of the state relates to the interests of other influential actors. Conversely, in the new or society-centred approach, attention is drawn upon co-ordination and self-governance. The shift from one approach to the other is mainly due to the fact that what were previously indisputable roles of government are now increasingly seen as more common societal problems which can be resolved by political institutions and by other actors too.

It is therefore evident that political institutions no longer exercise a monopoly of the orchestration of governance (Marsh and Rhodes 1992; Smith 1993). Thus, the conventional, state-centric image of politics and the role of the state in society appear to account for less of contemporary patterns of power and authority due to changes in both the internal environment and also in an era of globalisation (Boyer and Drache 1996; Camilleri and Falk 1992).

A number of governance conceptions have developed and one particularly important category of literature views governance as a socio-cybernetic system (Kooiman 1993). This system highlights the interdependence among social-political-administrative actors and governance is therefore the result of interactive social-political forms of governing. This approach to governance contradicts the traditional notion of

governing by a central actor, claiming that there is no longer a single sovereign authority. In contrast, there is a great variety of actors specific to each policy area. The system assumes that when formulating policies there is interdependence between the actors as the boundaries between public, private and voluntary sectors have become blurred. In this case, the task of government is to enable socio-political interactions and to encourage arrangements among several actors in order to facilitate decision-making.

The socio-cybernetic system perspective gives rise to a number of propositions which underpin the governance analytical model that is being proposed and developed in this chapter. In this study, the term *governance*:

- refers to a complex set of institutions and actors that are drawn from government but also from beyond it;
- transcends formal institutions and rests on the importance of informal rules too;
- recognises the blurring of boundaries and responsibilities for tackling social and economic issues;
- identifies the power dependence involved in the relationships between institutions involved in collective action;
- is about autonomous self-governing networks of actors; and
- recognises the capacity to get things done which does not rest on the power of a government to command or use its authority. It sees governments as able to use new tools and techniques to steer and guide.

The above propositions will form the foundation of the theoretical basis of governance for the governance assessment framework that will be presented in this chapter.

3.3.2 Measuring governance

Just as governance as a concept is broad and wide-ranging, the indicators purporting to measure it are also varied. Methods that attempt to measure governance can be broadly categorised under two main headings: process or performance measures. Whereas the former type of measure tries to capture specific institutional arrangements, the latter involves assessments of government effectiveness. The key difference is in the extent of judgement that is used in the compilation of such indices. A greater degree of valuation and judgement is required for the process indicators.

Although comparative literature pioneered by the works of Knack and Keefer (1995), Mauro (1995) and Alesina (1998) has made important advances in uncovering the political, institutional and social determinants of economic growth, the governance indicators in this approach have their own shortcomings. The quantitative measurement of the effect of governance can be challenged on a number of grounds. Among the concerns with this type of measurement are causality problems (Chong and Calderon 2000), measurement errors (Glaeser et al. 2004), missing-variable considerations (Bardhan 2005), conceptual vagueness (Weiss 2000) and a number of other econometric problems (Malik 2002). A major underlying difficulty is the fact that the political economy of growth still lacks a

proper theoretical underpinning of the channels through which institutions and governance affect growth. (Helpman 2004).

Six characteristics of governance indicators have been distilled from the empirical literature on governance:

1. Subjective indicators based on a large number of assessments have been generally preferred.
2. There is a preference for indicators produced by private agencies with a perception that these are more likely to be accurate.
3. An indicator that is more strongly correlated with other governance indicators is likely to be more representative than an indicator measuring a similar dimension but only weakly correlated with other governance indicators.
4. Indicators with a robust theoretical and research underpinning are also preferred.
5. Indicators with a greater coverage of countries and longer time horizon are considered to be more appropriate.
6. Subjective indicators can also be aggregated to yield more precise estimates of governance.

3.3.3 Issues with current thinking

As the governance concept and literature gained momentum over the years, it quickly became a policy prescription promoted by international aid agencies. Governance was primarily seen as a tool to empower and enhance the state, market and civil society relationship. Pioneered by the work undertaken by the World Bank (see Kaufmann 2003; Kaufmann and Kraay 2002a, 2002b, 2003a, 2003b; Kaufmann et al. 1999a, 1999b, 2002, 2003, 2005), 'good governance' became a central aspect of development aid packages and reform programmes.

Nevertheless, Henderson (2006) observes that good governance has tended to be 'preached' as a salvation to developing countries by Western aid donors. This links the notion of good governance with conditionality. As a result, an element of resistance towards good governance among developing countries has developed over the years.

Critics also argue that the philosophical ideologies of good governance as a concept are 'a-historical' and do not reflect the process that most developed countries faced when building their own institutions (Grindle 2004). Doornbos (2003) states that 'there has hardly been a consensus as to its core meaning, and less and less of a common idea as to how it could be applied more concretely', and that the term *governance* is open-ended and vague. Doornbos (2003) further comments that 'good governance' has 'donor-conceptualised' or 'Western-derived' standards rather than a universal one. Moreover, Suhrke (2007) argues that in reality, local ownership means ownership by recipient countries of donor-imposed ideas and institutions which in the long-run prejudice the sustainability of the project. Hulsman (2005) argues that the true test of any governance-related aid must be judged on whether locals continue sustaining the new institutions after the consultants have left the country.

Following numerous examples of interventions that led to increased fragility in states such as Fiji (Boege 2008), it is apparent that local standards, perspectives and cultural norms should not be overlooked when such reform programmes are designed. It is the key to their effectiveness, legitimacy and success in the long run. In the same manner, socio-economic and environmental factors, such as 'location, size of the economy, market configuration, community perceptions and socio-political history' (Ray 1998), must be also considered when adopting the concept of good governance.

To this end, Wesley-Smith's observation with regard to the state-building endeavours in the Pacific can be generalised for other developing countries and small states:

Institutional structures can be readily designed by consultants and established or re-established with the help of skilled and experienced expatriates. Capacity-building efforts can also yield promising results, at least in the short term. What is much more difficult for outsiders (or insiders, for that matter) is to change the wider political culture in which western-style state institutions must operate over the longer term. Traditional economic formations, ideologies and identities remain resilient in most of the Pacific places considered likely candidates for state failure. Modern ideas about society and government are highly unlikely to be internalised any time soon (Wesley-Smith 2007).

The problem of the current thinking and policy prescriptions tied to 'good governance', is that it is fundamentally based on structures and institutions that are not part of the institutional set-up of the societies which they are expected to govern. The challenge is to think beyond the model of the Western state and to develop a holistic model that reflects the reality in such states including their particular characteristics.

3.3.4 Conclusion

Summing up, cognisant of both the importance and the shortcomings of the governance concept, this chapter seeks to present a governance framework that builds on the strengths of the concept yet tackles the criticisms levelled against it. This holistic governance framework is developed in the next section.

3.4 The governability assessment framework

Although governance is recognised as an important building block for resilience, current governance assessment models and the reality of many developing states, including small island states, are disconnected. This section proposes an assessment framework that tries to incorporate the special characteristics of a country's social-economic setting as well as the prevailing governance system in place. The section will first define governance for the purposes of this framework before analysing the components of the framework.

3.4.1 A working definition for governance

Governance is primarily an interactive process among state stakeholders (Larmour 1996). Involving all stakeholders of the governance system will reflect the concerns of all whenever there is a need to address a societal problem, because the primary

aspirations of a civil society should be to enhance the well-being of the community (Lovan et al. 2004).

The interactive governance model as proposed by Bavinck et al. (2005) draws heavily on the research undertaken by Kooiman (1993, 2003). At its foundation, governance is defined as 'the whole of public as well as private interactions taken to solve societal problems and create societal opportunities. It includes the formulation and application of principles guiding those interactions and care for institutions that enable them' (Bavinck et al. 2005). This is the working definition that this study is adopting for governance.

Bavinck et al. (2005) see society as being composed by large numbers of governance actors, who are constrained or enabled in their *actions* by the *structures* they operate in. In this perspective, *actors* can be described as any social unit possessing agency or power of action. These include individuals, associations, leaders, firms, departments, government bodies and international organisations. The interactive governance approach argues that many actors at different levels of society participate in the governance process and therefore the approach itself advocates broad participation in governance. On the other hand, *structure* refers to the frameworks within which these actors operate. Frameworks have the potential of limiting or widening their action potential and take into account culture, law, agreements, norms and traditions.

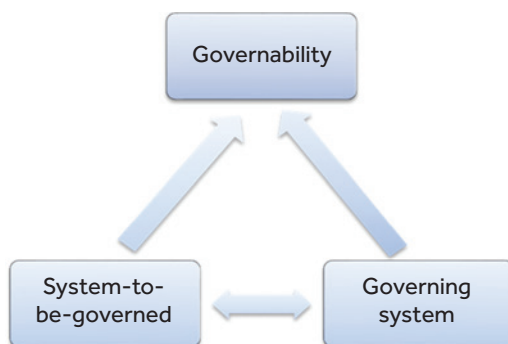
In order to capture the spirit of Bavinck et al. (2005), the governance assessment model being developed needs to distinguish between the system in which actors interact and the frameworks in which they operate.

3.4.2 Conceptual model

In order to formulate the assessment framework, governance needs to be understood as being a function of both the system it seeks to govern and the governing system that incorporates all the different actors. This is best described by the term *governability*, which can be defined as the capacity to govern. In this study, governability is defined as having two components as illustrated in Figure 3.1.

Each of the components and the respective subcomponents will be analysed in depth in the forthcoming sections.

Figure 3.1 The governability assessment framework



Source: Fabri.

3.5 The system-to-be-governed

Governance interactions are always contextually situated; they do not take place in a void. This is because these interactions are embedded in a system that comprises elements of history, culture, technology, norms as well as the current dominant issues (Graham, et al. 2003). The Commonwealth, which embraces small member states from four distinct maritime regions, offers unmistakable evidence of such diversity notwithstanding the shared colonial history. Thus, for example, whereas Pacific islands are more home to chronically contested constitutional order such as in Fiji (Larmour 1996), the Caribbean countries demonstrate the persistence of democracy, despite ethnic and class cleavages, recurring economic crises and weaknesses in the rule of law (Allahar 2001; Payne and Sutton 1993).

Given these variations, generalisations cannot be made about countries. When analysing the system-to-be-governed, a further decomposition can be made which distinguishes between the structural elements, such as history, traditions and other factors, and the dominant policy challenges that also have a bearing on the system-to-be-governed. This distinction is illustrated in Figure 3.2.

The two elements will be analysed in detail below.

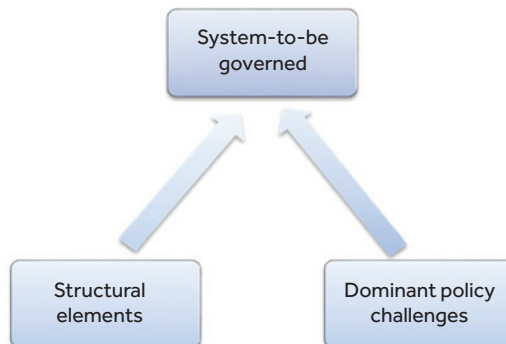
3.5.1 The structural elements

Graham, et al. (2003) argue that societies are a product of a number of factors which include historical influences, cultural norms, traditions and technology. For the purposes of this study, structural elements of the system-to-be-governed can be identified as history, culture and identity, traditions, technology, citizenship and international partnerships. The individual elements are explored below.

History

Present institutions and policy-making efforts are always a function of a country's historical development and influences. In an island, this is even more evident because of colonialisation, which had a long-lasting effect on the trajectory of a

Figure 3.2 The system-to-be-governed dimension



Source: Fabri.

country's political, social and economic development. Furthermore, colonialisation also determined the social and ethnic composition of island polities, since large-scale immigration also took place. This had lasting consequences for the welfare of indigenous islanders, for class, racial and ethnic cleavages, and for the identity of island 'nations', as demonstrated in Fiji Islands, Mauritius or Trinidad and Tobago (Srebrnik 2000, 2002a, 2002b).

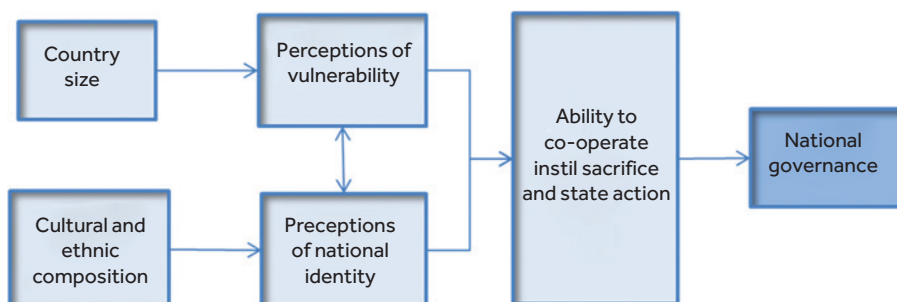
Culture and identity

Gellner (1983) claimed that a country is likely to be most successful when a common national culture is present. He argues that societies that are deeply divided cannot co-operate and co-ordinate policies. Gellner (1983) adds that the willingness to sacrifice for the sake of the nation diminishes when societies are culturally and ethnically heterogeneous. Rigid status barriers such as ethnic, linguistic or religious differences need to be reduced and the 'unity in diversity' principle needs to be strengthened among the population. Central to the reduction of these barriers is education. It is only by nurturing this co-operative spirit that people hailing from different backgrounds can co-operate and live together. Building on this literature, Campbell and Hall (2009) argue that the cultural composition of a country not only impinges on vulnerability but will also affect institutional development and performance of culturally heterogeneous countries as shown in Figure 3.3.

Traditions

Customary law and indigenous knowledge as well as traditional societal structures still have important influence in developing countries, including some small island states. These structures take the form of clans, tribes, religious brotherhoods, and traditional institutions such as village leaders and elders, which still determine the everyday social reality of citizens in these countries. Evidence from countries such as Vanuatu, Solomon Islands or Papua New Guinea shows that such customary institutions can have a bearing on formal institutions. In fact police are hardly present on the ground in rural areas, since they can become active only upon invitation by the chiefs and elders and mostly have to ask for permission from the chiefs to enter a village (Boege 2008). Given that such institutions and norms can infiltrate and

Figure 3.3 Causal model between national identity and governance



Source: Adapted from Campbell and Hall (2009).

subvert formal institutional structures, due consideration needs to be made when assessing the system-to-be-governed.

ICT readiness

Information is the foundation of all governing as it forms the basis of decisions and processes. Following the emergence and proliferation of information and communication technologies, countries are now in a better position to source, collect, process and transmit information. The role of such technologies can have profound effects on governance.

Three facts that explain the inherent link between information and governance are (Nath):

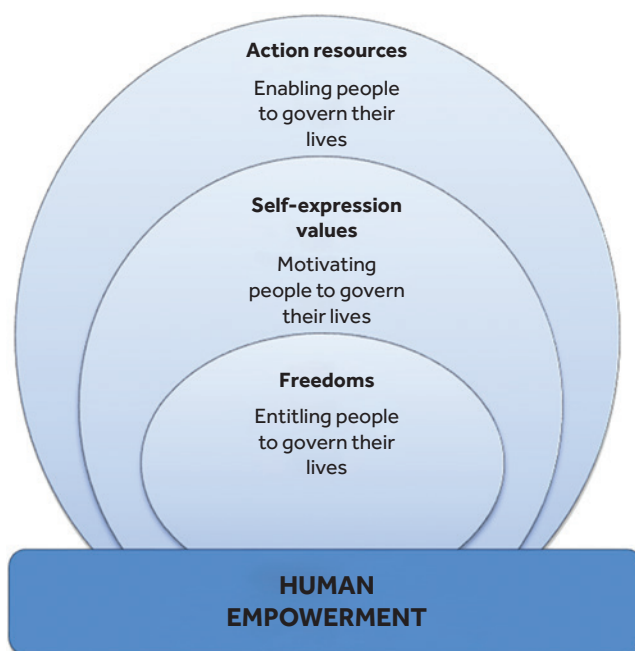
1. Access to information and knowledge is essential to form an opinion and make an informed decision. Judicious and well-informed decision-making is dependent on the quality and timeliness of information.
2. Circumscription of information and knowledge with a confined group opens up avenues for its manipulation for exploitative purposes.
3. Distribution of information is akin to distribution of power.

Mechanisms propagating information equality therefore often meet resistance from groups that stand to lose power through these processes. The new form of governance helps ensure that citizens are no longer passive consumers of services offered to them and could transform their role in deciding the kind of services they want and the structure that could best provide the same. Information and communications technology (ICT) can influence the process of governance in various ways and in varying degrees, from improving the current mechanisms of delivery of services to transforming the entire mechanism and the nature of services themselves.

In addition, ICT and other technologies are important contributors to empowerment (Nath). With the expansion of the information exchange sphere through ICT, individuals and communities earlier confined within isolated information islands are now able to assimilate knowledge from different sources and draw a comparison with their own situation. They are able to broaden their perspective, share common concerns and form alliances with other communities. Emergence of open communication channels to interact and become a part of the larger information sphere is therefore a stepping-stone to empowerment of individuals and communities in developing countries. The empowerment process is non-exclusionary in the sense that each individual is a recipient and incubator of knowledge in a truly networked world.

Citizen empowerment

Human empowerment is becoming an increasingly important driving force behind democratisation (Welzel and Inglehart 2008). The recent Arab Spring is in fact a result of the population being more empowered to take control over their lives and stand up for their rights. Welzel and Inglehart (2008) describe human empowerment as a triad consisting of democratic freedoms, self-expression values and action resources. Each of these three ingredients empowers people on a different level.

Figure 3.4 Human empowerment model

Source: Adapted from Welzel and Inglehart (2008).

Democratic freedoms empower people on the level of entitlements, granting people the civil and political rights that allow them to govern public life and their private lives. Self-expression values empower people on the level of motivations in making people willing to govern their lives. Self-expression is a cluster of values that include social toleration, life satisfaction, public expression and an aspiration to liberty. Action resources include both material resources and cognitive resources such as education and skills, which help people to govern their own lives. Together these three elements complete human empowerment as a whole, as shown in Figure 3.4.

International partnerships

Many countries are members of supranational organisations. Small states are particularly active in the Commonwealth, World Bank, IMF, ILO and UN, to name a few. Such organisations are important as they bestow an advocacy role on countries on major issues but can also be a source of funding for countries to undertake specific projects. Close links with such organisations impinge on national governance and are a characteristic of the system-to-be-governed.

For the purposes of this study, the structural element of the system-to-be-governed component comprises the six dimensions explained in detail above. Each dimension has a number of evaluation questions that will be developed in the methodological section. However, the structural element is in turn only one dimension of the system-to-be-governed concept. The next sub section will analyse the dominant policy challenges.

3.5.2 The dominant policy challenge element

Any system-to-be-governed is also characterised by a number of dominant policy issues and concerns. These particular challenges highlight the dynamic aspect of the system-to-be-governed as policy concerns change over time and can have implications for governance. As a preliminary model, a number of policy challenges that small states are facing have been considered, including corruption, urbanisation, transnational crime, natural disaster management, environment, economy and employment, healthcare, education and social inclusion. These will be analysed in detail below.

Corruption

Defined as the use of public office for private gain, corruption is a threat to the principles of democratic government and the rule of law. It subverts the judicial system, undermines the legitimacy of the state and is detrimental to both investment and economic growth.

The inherent characteristics of small states present some specific risks for corruption as well as for the capacity of states to combat corruption. Against the backdrop of small size and the resulting familiarity, it manifests itself through various forms of bureaucratic, administrative and political corruption. The relatively low ratio between elected representatives and citizens facilitates the emergence of familiar networks between governed and governors. This is likely to foster patronage, nepotism and clientelism (Larmour 2005). Cultural and tribal heritage can also encourage corruption, since politicians are under pressure to cater for their tribe rather than to serve the national interest (Vaadre 2009).

Natural resource management, offshore financial activities and international development aid are especially vulnerable to corruption risks in small states (Larmour and Barcham 2006). In addition, anti corruption efforts are hampered by a number of factors including weak government institutions, low wages and shortage of opportunities for public service employees, as well as lack of participation by the public and civil society.

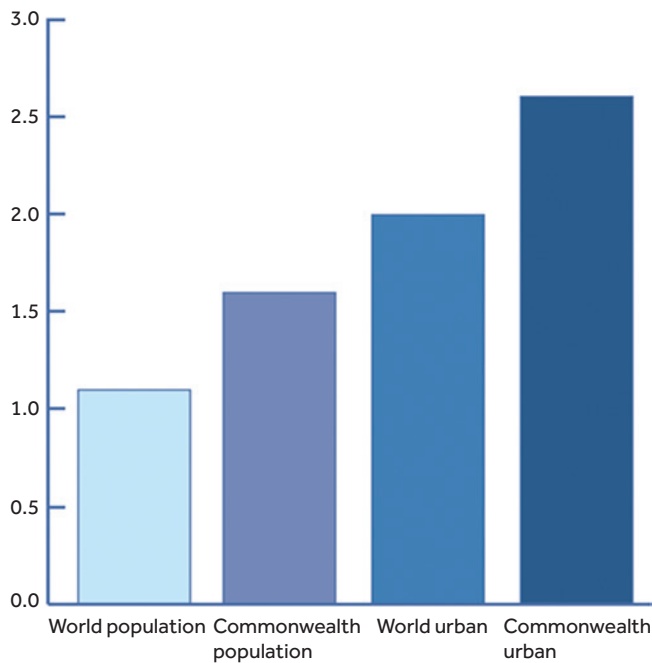
Urban growth

Many Commonwealth small states are currently undergoing a transformation fuelled by rapid economic and social growth in urban areas. Since Commonwealth countries are on average less urbanised than the rest of the world, there is currently a phase of convergence which results in higher urbanisation growth rates (ComHabitat 2010). Figure 3.5 clearly illustrates this.

Although the Commonwealth urban average growth rate illustrated in Figure 3.5 is mainly driven by large countries such as India, some small states are displaying rapid growth in the urban population, as shown in Table 3.1.

The growth of cities is a problem in small states as it puts pressure not only on the environment but also on the infrastructure such as housing, water supply and waste management (UN-Habitat 2008). Governance and planning of the cities becomes

Figure 3.5 Annual urban growth rates (2005–10)



Source: ComHabitat (2010).

Table 3.1 Urban population growth in small states

<1%	1–2%	2–3%	3–4%	>4%
Antigua and Barbuda	Bahamas, The	Botswana	Belize	Gambia, The
Dominica	Barbados	Brunei	Lesotho	Maldives
Grenada	Cyprus	Darussalam		Solomon Islands
Guyana	Fiji Islands	Namibia		Vanuatu
Jamaica	Kiribati	Trinidad and Tobago		
Malta	Papua New Guinea			
Mauritius	St Kitts and Nevis			
Nauru	St Lucia			
	St Vincent and Grenadines			
	Samoa			
	Seychelles			
	Swaziland			
	Tonga			
	Tuvalu			

Source: ComHabitat (2010).

even more significant given this rapid growth in urban areas. As UN-Habitat (2008) observes, ‘well-planned and well-governed areas can greatly reduce risks – while unplanned and poorly governed cities can greatly increase them.’ Turvey (2007) also includes an urbanisation indicator in his vulnerability assessment of countries and finds that small states are more vulnerable to such effects.

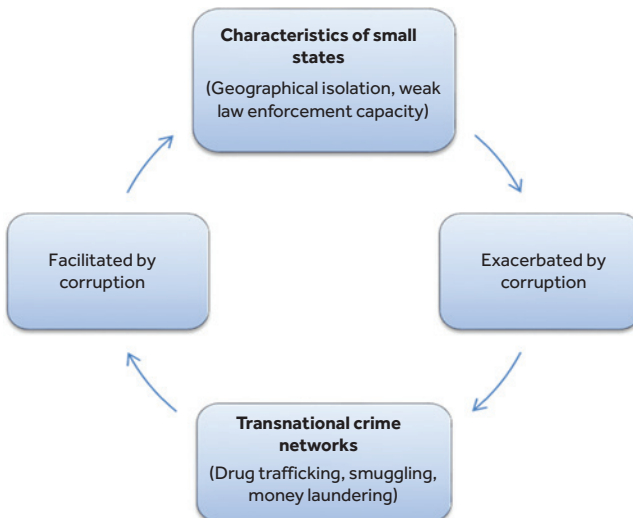
Transnational crime

Transnational crime constitutes a challenge for every nation. Small states, especially island states, are particularly vulnerable when it comes to transnational crime because the transnational crime networks establish themselves in countries that can offer the least resistance.

The potential existence of transnational crime activity in small states can therefore be determined by the nature and characteristics of the states themselves. Thus, the geographical conditions of the states, particularly the islands, give rise to smuggling activity and drug trafficking. The socio-economic and cultural characteristics of the states give rise to corruption and money laundering, while the characteristics of poor law enforcement capacity exacerbate these issues and give rise to identity and electronic fraud (McCusker 2006). Weak banking systems and the provision of offshore services in some small island states have made such islands a target for increased money-laundering activity, further undermining economic stability. These characteristics not only make them vulnerable to such threats but also facilitate their existence. A reinforcing spiral of poor governance and transnational crime is created, as shown in Figure 3.6.

While small states are susceptible to these threats, the poor law enforcement capacity of these states further increases their vulnerability. Typically, small states cannot

Figure 3.6 Transnational crime self-reinforcing cycle



Source: McCusker (2006).

afford the high cost of security-related technology infrastructure and of training security personnel.

Natural disaster management

Natural disasters in many small states have undone investments undertaken over the years, very often setting the country back. Climate change has increased both the intensity and the frequency of natural disasters, making small islands more susceptible to the risks of such disasters. Many small states, such as Samoa, St Lucia, Grenada and Vanuatu, have experienced the highest economic losses on capital stock in relative terms due to natural disasters (Barrito 2008). The losses incurred following natural disasters are not only economic but both social and political, with particular stress on the governance structure. Turvey (2007) also finds that small island states are more vulnerable to natural disasters.

Environment

The environment has the potential to act as a powerful economic driver and give rise to real economic benefits, presenting novel opportunities and stimulating the economy to grow in new directions and ways. The World Bank has shifted its emphasis from solely economic growth to encompass a number of other factors, which includes environment. The United Nations also included environment as one of its Millennium Development Goals. Viewing the environment as an economic driver requires a fundamental shift in the way in which the relationship between the environment and the economy is understood. The role of the environment is thus transformed from that of a passive provider of the materials and services necessary for economic activity to that of an active partner capable of influencing and directing economic development (ECFIN 2004). The environment can contribute to improved economic competitiveness through an improved tourism product, attracting inward investment. The growth of the green economy environmental governance therefore takes an important role in national and international policy agendas. Given the importance of the decisions at stake and the importance of the environment it is imperative to analyse how humans exercise their authority over natural resources and systems. Briguglio et al. (2006) also argue that environment management is a component of resilience, even though it was not included in the index because of data constraints.

Economy and employment

Economic growth and employment opportunities remain important policy challenges especially in this post-crisis global environment. Small states face particular challenges in this regard due to their inherent economic vulnerability, which is well-documented in the literature (Briguglio 1995, 2003; Atkins et al. 2000). This vulnerability can constitute a disadvantage to economic development by magnifying the element of risk in the growth processes (Cordina 2004a, b). Providing employment opportunities is also a challenge, as lack of employment opportunities can destabilise governance, as the Arab Spring has shown. This notwithstanding, several small states have performed well in terms of economic development and employment. Several

strategies have been adopted by such small states, which have used their jurisdiction as an economic opportunity by setting up service-based industries. Today, small states still face challenges in economic development, and economic and employment matters remain quite a dominant policy challenge.

Healthcare

In order to contribute effectively and participate in society, a population needs to enjoy good health. There is widespread agreement that health is an important component of human development (Canning 2010). Health was identified as a component of human development in the Human Development Report 1990 (UN Development Programme [UNDP] 1991) and is a central part of the Human Development Index. The World Bank has extended its focus from solely economic growth to embrace a number of other factors including health. The United Nations also included healthcare as one of its Millennium Development Goals. However, access to adequate healthcare remains a challenge in many developing countries. Epidemics across the globe have put additional burdens on governments and their resources. Citizens have a right to adequate healthcare and therefore investment in facilities and resources to improve healthcare remains a dominant policy challenge in many countries.

Education

An educated population is necessary for a vibrant and active as well as participative civil society, and education is a value in itself. Education is one of the main drivers that stimulate both economic and human development and remains an important policy goal for governments across the globe. Sen (2003) argues that ‘widening the coverage and effectiveness of basic education can have a powerfully preventive role in reducing human insecurity of nearly every kind’. The World Bank emphasis on solely economic growth has shifted to include a number of other factors of which education is one. The United Nations Millennium Development Goals include education. Governments in many countries continue on their quest to increase literacy rates and to expand the opportunities for their youths. As the Commonwealth Secretary-General, Kamalesh Sharma, said, ‘there can be no question that education is central to all sustainable democratic, social and economic advances. It is pivotal to all that the Commonwealth seeks to achieve’ (Sharma 2012).

Social inclusion

Reducing marginalisation of vulnerable groups is a policy goal in many countries as well as trying to increase social cohesion, which is defined as a key building block for improving resilience. Social development and social cohesion can be conducive to economic growth (Foa 2011). This connection is also assumed in the Global Competitiveness Report, which puts forward an index of sustainable competitiveness with a social cohesion component (Bilbao-Osorio et al. 2013). In addition, social development and social cohesion facilitate collective action (Briguglio et al. 2006; Briguglio 2003). Given its importance, social cohesion and integration have been

identified as key challenges in small states and it is believed that social inclusion is central to fostering development and building resilience.

3.5.3 Conclusion

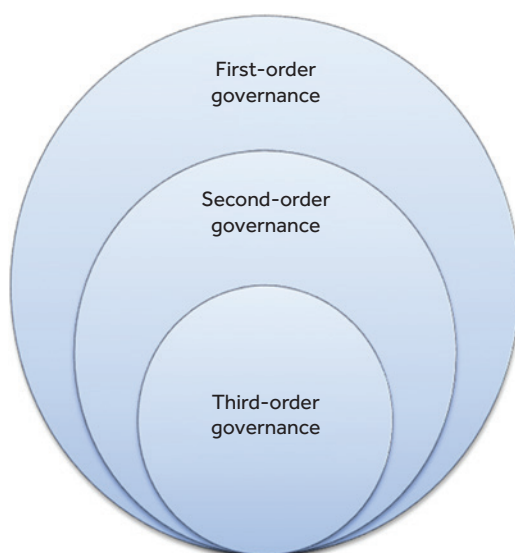
This section has examined context as a basis for analysis on the system-to-be-governed element. Compared with other governance models and frameworks, this represents an innovation, as other models do not consider the context and environment in which governance activities occur. In addition, the relevance of considering the contextual element is even more important for island states. As complex systems, islands need to be examined within a broad ecological and historical framework. As explained by Warrington and Milne (2007), islands are characterised by complexity, not simplicity; diversity, not uniformity; contingency, not predictability. In order to complete the assessment framework, an analysis of the governing system is warranted and is developed in the next section.

3.6 The governing system

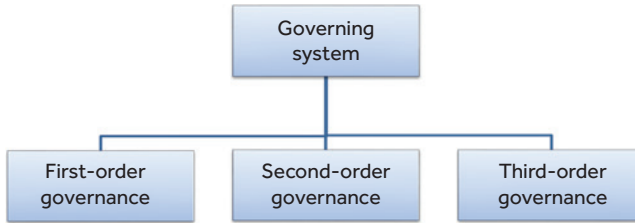
From a governing system perspective, interactions between different actors and stakeholders are central to the governance ecosystem. Drawing from the interactive governance model, the framework further decomposes the governing system into three main orders. These orders can be visualised as three circles nested in each other (see Figure 3.7).

The outer ring deals with the day-to-day affairs of governance and is mainly focused on solving problems and creating opportunities. This is termed first-order governance.

Figure 3.7 The three orders of governance



Source: Adapted from Bavinck et al. (2005).

Figure 3.8 The governing system component

Source: Adapted from Bavinck et al. (2005).

Second-order governance deals with institutional design and maintenance, while third-order governance involves the underlying values and principles.

The governing system component is therefore composed of a series of indicators that are categorised by the three orders of governance described above (see Figure 3.8).

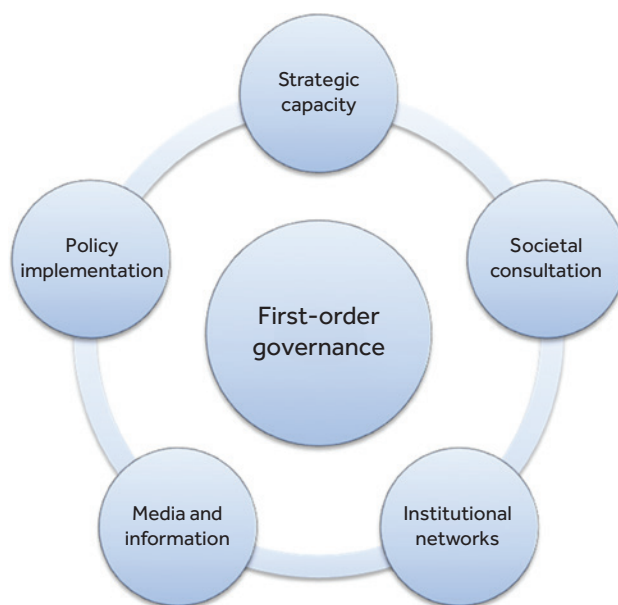
3.6.1 First-order governance

Traditionally, society perceived government as being solely responsible for solving problems while the market was seen as the source of opportunities. However, today's realities show that this clear dichotomy no longer holds. It is recognised that societal problems and opportunities are shared between different actors. Therefore, in order to address societal problems and opportunities, leverage and collaboration are needed between different actors and stakeholders (Kooiman 2003). In an issue-based polity, one can observe that particular actors and stakeholders do take the lead according to the issue at stake.

Bavinck et al. (2005) argue that, in the first order of governance, anyone involved in governing forms images about what is being governed. Kooiman (2003) suggests that governing is inconceivable without the formation of images. During image formation, both opportunities and challenges will be defined and formulated into issues. Throughout the image formation process, information will be gathered, opinions will be heard and analysed and finally an image will be formed on the issue at stake, on how to address it and what one would like to achieve. Governing images and the way in which they are formed have an important, even decisive, influence on the unfolding of the ensuing governance process (Kooiman 2003).

Instruments act as an intermediary and translate the formed images into action. The variety of instruments used is particularly large, as actors have developed a plethora of instruments ranging from 'soft' instruments, such as information campaigns, to 'hard' instruments, which include laws and rules. Governing instruments derive from a broader societal base from which they are selected and these can include knowledge, finance and juridical instruments. Therefore, the distribution, and availability of and access to such instruments from the societal base have important implications for governance.

The last element of interactive governance is action – putting instruments into effect. This includes the implementation of policies according to set guidelines, which is a relatively dry and routine affair. Action may also, however, consist of mobilising other actors in a new direction, and this relies on political leadership or social movements.

Figure 3.9 First-order governance

Source: Fabri.

The chapter proposes that five main dimensions capture the spirit of first-order governance. These are analysed below. The dimensions are shown in Figure 3.9 and analysed below.

Strategic capacity

First-order governance is largely about solving problems and creating new opportunities. To this end, the strategic capacity of government to steer other actors is an important element in trying to capture the spirit of first-order governance. The literature on strategic capacity draws heavily on the management discipline especially at company level. Berman and Maxwell (1986) argue that successful strategic managers were seen to require the following qualities:

- ability to gauge both the internal and external environments;
- to assess the risks of failure as well as the perseverance to persist with strategies that are selected to ensure that the organisation is moving in a purposeful direction;
- the wisdom to refrain from managing the components of the organisation but rather to provide leadership; and
- the skill to spot the leading edge of an activity and its peak and decline.

These qualities can therefore be used to assess the strategic capacity element of first-order governance.

Societal consultation

The interactive governance model is built on interactions between different actors and this element of first-order governance captures the spirit of such interactions

and consultation during the process. In modern societies, all actors are playing an ever-increasing role in policy initiation and formation. The literature refers to the Berger Commission in Canada, commissioned in 1975, as the earliest example of an innovative participatory process of decision-making during which views of stakeholders were actively sought (Cass 2006). Kenyon (2003) considers it the first example of participatory methods in policy-making. Engaging the public in a wide range of policy areas, at different stages in policy development, using participatory and deliberative methods and processes, is now an accepted and legitimised practice (Cass 2006). The literature on this participatory or deliberative turn has provided theoretical justification for the adoption of these practices in areas as varied as the health sector (Abelson et al. 2001), nanotechnology development (Macnaghten et al. 2006), natural resource management (Halseth and Booth 2003), transport planning (Bickerstaff and Walker 2001), waste management (Petts 2005), 'new' or controversial science (Pellizzoni 2003) and environmental policy (Owens et al. 2004). Today, most policy processes include a consultation period with stakeholders and the general public at large even in small states such as Malta, Barbados and many of the Caribbean countries.

Institutional networks

In the interactive governance model, problem solving and creating opportunities is all about developing networks between different actors to achieve the common goal (Torfing et al. 2012). With governance no longer being monopolised by the state, network building and co-ordinating with other actors is crucial for governance to truly solve problems and create new opportunities. According to Rhodes (1988), networks or communities can exist in a range of areas and are based upon functional areas. Rhodes (1988) continues by arguing that networks are characterised by stable and continuous relationships between members. This is also understood by Klijn (1997) who perceives policy communities or networks as tightly integrated networks with 'dense' interactions between participants.

Media and information

The mass media and information play an important role in the public sphere as the major arena in which image formation is played out in modern societies (Kooiman 2003). The media is important as it fosters a communication process involving the viewpoints of all actors and facilitates the public policy process. Some key findings from the literature suggest that access to mass media empowers people politically and increases the benefits they receive from government programmes (Strömberg and Snyder 2008). This influence has been found for different types of government programmes and different countries, such as unemployment relief in the United States (Strömberg 2004), public food provision and disaster relief in India (Besley and Burgess 2001, 2002) and educational spending in Uganda and Madagascar (Reinikka and Svensson 2005; Francken et al. 2009). Concepts such as pluralism in the media and access to the media are an important element in seeking to capture the spirit of first-order governance.

Policy implementation

Transforming strategies and policies into tangible and successful results on the ground is an important element in governing and first-order governance. Citizens and societal actors are affected by the policies that are actually implemented and it is the implementation process that determines the success or failure of any initiative. Government and other policy actors are in turn judged by their implementation efforts. Implementation is a delicate stage of the public policy process and may not be straightforward. Drawing on the works of Alexander (1985) and Hogwood and Gunn (1984), a number of factors which will have the successful implementation of change can be identified and these include resources, co-ordination, lack of leadership, lack of detail, lack of communication, and tasks not specified in correct sequence. Baier et al. (1986) further identify two implementation problems. The first set of problems can result from bureaucratic incompetence and the second set of problems is associated with conflicts of interest between policy-makers and implementers.

3.6.2 Second-order governance

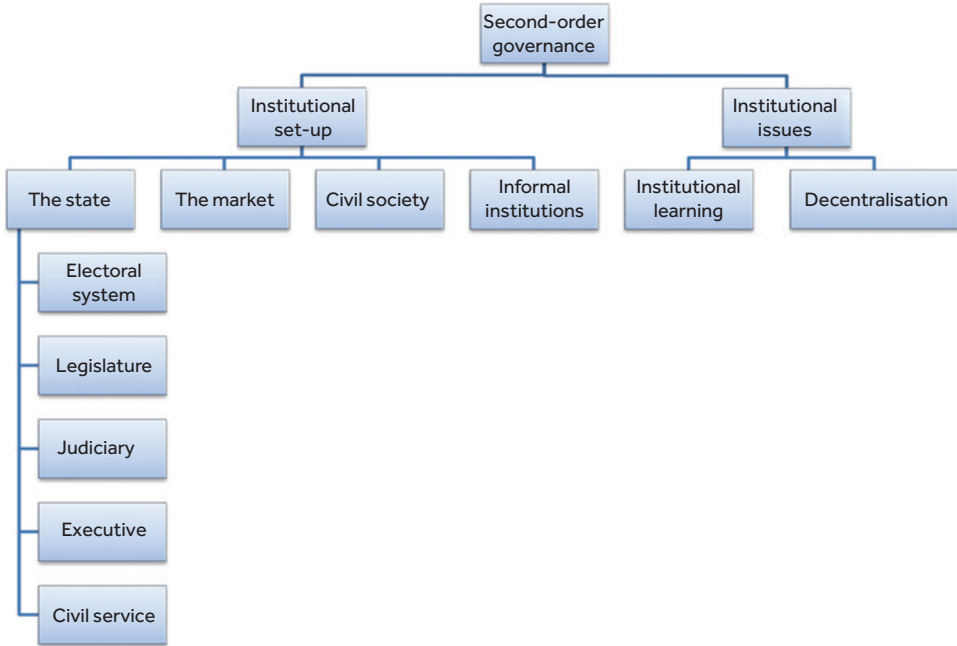
First-order governance, or the interactions between actors to solve problems and create opportunities, does not happen in a vacuum. These orders of governance are nested within each other and first-order governance takes place within a socio-political institutional environment. Whereas first-order governance is primarily a process activity, second-order governance is more of a structural dimension. It looks at the factors enabling problem-solving or opportunity-creating practices and can be best described as the design, care and maintenance of these institutions that control interactions between actors or enable them to take place. From a governance perspective, they need to be continually evaluated and adapted to changing circumstances. Institutions should be dynamic with institutional settings being designed, created, reviewed, maintained, reformed and changed. Therefore, the second order of governance needs to be conceptualised as balancing the governing needs and the governing capacities.

Second-order governance can be further broken down into the institutional set-up and institutional issues. In an interactive governance framework, institutions include not only the traditional state model but also informal institutions as well the market and civil society. Institutional learning and decentralisation can be identified as institutional issues. This is illustrated in Figure 3.10.

The state as an institution

In analysing second-order governance, a lot of the institutional setting is found in what can be referred to as political society. In the political process, political society is perhaps the most critical link in the governance chain. It is the arena where citizens are represented and their views are aggregated and packaged into specific policy demands and proposals. Political society is where much of the political agenda is set and where most of the formal institutions are found. Governing political society is a crucial element in economic development. In fact, in an extensive literature review

Figure 3.10 Second-order governance

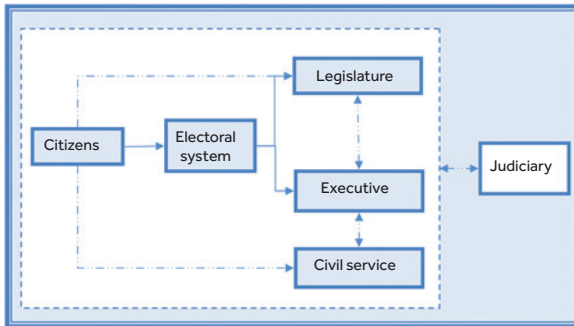


Source: Fabri.

on the subject, Jutting (2003) concluded that ‘most of the studies suggest a strong and robust relationship between institutional quality and growth and development outcomes’. Political society is not a single institution but rather a series of them, all of which are important for the policy-aggregating function (Brown 2010; Farrugia 2007). This can be seen through Figure 3.11.

Electoral system. Elections are among the most important ways in which citizens can participate in decisions that affect their lives and hold their representatives

Figure 3.11 Political society



Source: Fabri (2007).

accountable for results. The political legitimacy that credible elections confer is essential for robust states and provides a crucial mandate if governments are to have the capacity to tackle a variety of sustainable development challenges.

An electoral system is designed to do three main jobs. First and most fundamentally, it translates votes cast into legislative seats. Second, it acts as the conduit through which the people can hold their elected representatives accountable. Third, it defines incentives for those competing for power to try and accommodate as much as possible of the electorate, thus giving voice to often-marginalised groups. There is also a range of specific institutional devices that can be used to target under-represented groups such as women and the poor.

It is believed that, in conducting its functions, the electoral system will improve the participation, legitimacy and accountability of a government.

The legislature. Effective legislatures contribute to effective governance by performing important functions necessary to sustain democracy in complex and diverse societies. Democratic societies need the arena for the airing of societal differences provided by representative assemblies with vital ties to the populace. They need institutions that are capable of writing good laws in both the political sense of getting agreement from participants and in the technical sense of achieving the intended purposes.

Although there is considerable variation among developed legislatures, it is safe to say that all functioning legislatures in democratic nations have a greater and more predictable role representing the population at large, in making laws and exercising oversight than those of less democratic societies. Legislatures should function as important governing partners because they represent citizens, shape laws and exercise a degree of oversight or control over the executive. Performing these functions contributes to good governance by increasing its capacity to monitor and respond to public sentiments; by playing a part in passing legislation capable of withstanding critical scrutiny; and by serving as a vehicle for improving the degree of efficiency and responsiveness in the administration of laws. The legislature also confers a degree of credibility on the country, as a well-functioning legislature allows actors to operate with a level of confidence in the system. While all these functions are important singly, performing them jointly is also important.

The judiciary. A judiciary that holds the law above everything and everyone is indispensable for good governance. Good consistent jurisprudence based on law, as well as predictable and time-efficient resolution procedures, is necessary for that sense of predictability, transparency and accountability which are the cornerstones of good governance.

At a very fundamental level, people need to know that their individual rights will be upheld even against the most powerful authorities. An independent judiciary with integrity can do this. A strong judiciary, with the power to review acts of government,

can protect the citizens from unlawful acts and hold government officials accountable for their corruption and abuse of power.

For a strong judiciary to be able to contribute to both governance and economic development there are a number of important characteristics of the judicial system that have to be met. Drawing from the literature (La Porta et al. 1997; Sen 1999; Bigsten et al. 2000), one can conclude that the judiciary can contribute efficiently to governance when:

- there are constitutional and operational guarantees of judicial independence;
- sufficient financial resources are predictably and transparently provided to the judiciary;
- competent judges are transparently appointed, assured security of tenure and provided a living wage;
- importance is also given to non-judicial mechanisms for settling disputes;
- judgments can be rendered, enforced and reviewed without danger to the person, family or property of the judges; and
- discipline within the bench itself is subject to the rules of due process.

However, the judiciary is not only about rules. Such rules have to be enforced too and countries need to have efficient and effective enforcement mechanisms. These include having an honest police force which respects the rule of law and works to ensure that it is respected and honoured by everyone.

The executive. The executive is the political tier at the apex of government. It is charged with directing the nation's affairs, supervising how policy is carried out, mobilising support for its goals and providing crisis leadership. The executive is thus responsible for setting the direction of society. The decisions that it has to make are not merely in immediate response to demands from groups in society. It does not only revolve around the aggregation of interests, values and preferences that come up via different channels to the executive level. It also implies transformative decisions that involve choices going beyond specific interests or preferences. It is believed that the biggest contribution the executive can give towards ensuring sustainable economic growth may be guaranteeing political stability. It is a necessary component in attracting investment as it reduces the uncertainty and risk inherent in investment decision.

The civil service. The civil service can be described as the machinery of government engaged in formulating and implementing policy as well as in regulating and delivering services. Governance issues in the bureaucratic arena take on special significance given the massive pressures that have been placed on the public sector to become leaner and more efficient and bring the services closer to the people. In recent years, there has been increasing empirical evidence that bureaucratic performance is important for economic development and is one of the main determinants of the degree to which a country makes social and economic progress (Kaufmann et al.

1999; Evans and Rauch 1999, 2000). Cross-country analysis, which articulated the belief that the bureaucracy was a key ingredient of the East Asian Miracle (World Bank 1993; Evans 1995) as well as one of the main reasons for Africa's dismal development performance (Blunt 1983; Hyden 1983), also strengthened the argument in favour of high bureaucratic quality.

A number of issues are important for governance when debating the civil service. The need to have objective entry requirements or an independent body on public service employment is a key concern. Competence is seen as stemming from competition based on merit rather than personal contacts or illicit payments. The pay structure is also an important feature in the well-functioning bureaucracy. Paying reasonable wages should encourage talented people to enter and remain in the civil service. Another important issue in the bureaucratic arena is the extent to which officials follow rules. Clear rules relating to how decisions are made and how civil servants conduct themselves are important for performance (Weber 1947). Although the existence of clear rules is often related to how the public views the bureaucracy, it is also linked to how efficient it is. Clear decision-making rules are typically seen as enhancing efficiency. The less clear rules are, the higher the risk of misuse of public office and poor decisions (Klitgaard 1988). Rules are also important for holding officials accountable. Internal rules to the bureaucracy require well-functioning enforcement mechanisms to be in place. Policy issues in society are typically complex and multidimensional, requiring the insights of civil servants with professional and specialised competence. Structuring the policy formulation and implementation process such that government operations can benefit from the advice of professionals is seen to be an important issue affecting bureaucratic performance. Although there are varied opinions about the extent to which participatory approaches can be accommodated with bureaucratic decision-making (Schaffer 1969), bureaucracies need a definite measure of autonomy from both politicians and the public. They cannot afford to be responsive to every demand placed upon them. It is therefore evident that a degree of autonomy is needed when it comes to formulating and implementing development strategies.

The market as an institution

The private sector is an important player in any society and, with the recent trends of privatisation, liberalisation and the emergence of multinational corporations, it has gained a more important role. For the private sector to operate effectively and contribute to economic development it requires an enabling environment to operate in (Posner 1998; Gabre-Mahdin 2006; Holden 2004; Altenburg and von Drachenfels (2008). The behaviour of the corporate sector has the power of affecting entire economies and the stability of the global financial system, as the recent global financial crisis has evidenced. These factors all point to the importance of corporate governance practices.

Civil society as an institution

The importance of civil society and its treatment as an institution in its own right has gained ground in recent years. There is no consensus as to what constitutes civil

society; however, the definition given by The London School of Economics Centre for Civil Society captures the main elements: ‘civil society refers to the arena of uncoerced collective action around shared interests, purposes and values. In theory, its institutional forms are distinct from those of the state, family and market, though in practice, the boundaries between state, civil society, family and market are often complex, blurred and negotiated. Civil society commonly embraces a diversity of spaces, actors and institutional forms, varying in their degree of formality, autonomy and power.’ Almond and Verba (1989) and Putman (1993) have found that civil society organisations are vital for democracy as they facilitate awareness and contribute significantly to a more informed citizenry, further enhancing accountability. Civil society organisations build social capital, trust and shared values, which are transferred into the political sphere and help to hold society together, facilitating an understanding of the interconnectedness of society and interests within it.

Informal institutions

In many developing states, customary institutions, born out of traditions, have stood the test of time and have been able to gel communities together. Unfortunately, Western notions of state-building and good governance have traditionally overlooked the role of such customary and traditional institutions even if these would have provided a backbone to communities and societies. This has been confirmed by Oxfam (2006) in its review of governance efforts in Pacific islands: ‘Donor programs on good governance emphasise the role of non-state actors (churches, NGOs, private sector organisations, trade unions), but these programs have often failed to define the place of customary authorities and indigenous structures that are so important in the region.’ In the Pacific Island states, state institutions are not the only institutions that fulfil functions that, in the model Western state, are clearly state obligations. ‘The state’ often has little relevance to many people in rural areas and outer islands.

Despite the efforts of colonial administrations and newly independent post colonial states to impose new state-based modes of governance on communities, these customary institutions have shown considerable resilience – and adaptive capacity (Boege 2008). Following a period of political upheaval and unrest in Bougainville, it was decided to build a new political order. Given that in the post conflict phase the population relied heavily on traditional institutions and customary mechanisms, there was a strong desire to include these informal institutions in the new political order. As a consequence, these informal institutions figure in the new constitutions of the Autonomous Region of Bougainville. Today, the political order combines Western governance institutions of a president, a parliament, a constitution and a public service. However, the political order also includes elements of informal institutions such as councils of elders and councils of chiefs. This political order has the advantage of being home-grown and enjoys a high degree of legitimacy. The Bougainville case demonstrates that new forms of ‘state-building’ which do not simply copy the Western model of the state, but draw on customary institutions that are rooted in the local communities and societies, can have astonishingly positive results. It supports Nixon’s proposition that ‘“traditional structures” are the cultural bedrock on which future attempts at state-building must be constructed’ (Nixon 2006).

Institutional learning

Institutions are supposed to be robust, stable and lasting; however, in order to remain effective they also need to reform and adapt to changing circumstances (Kooiman et al. 2005). Institutional reform does not and perhaps should not always start from scratch but should primarily address the weaknesses and fill the gaps in the framework that already exist. Sometimes more fine-tuning is all that is needed rather than a complete overhaul. However, reform is not automatic. Institutions, particularly formal institutions, have to be flexible, able to respond in a timely fashion, and willing and able to learn from experience and to change their ways accordingly. Morgan (1986) makes the distinction between the process of learning and the process of learning to learn. Learning to learn involves systems which 'are often able to detect and correct errors in operating norms and thus influence the standards that guide their detailed operations. It is this kind of self-questioning ability that underpins the activities of systems that are able to learn to learn and self-organise'. Morgan (1986) also points to a number of barriers to organisational learning which are particularly common in bureaucratic organisations. First, fragmented organisational structures lead to poor flows of information and knowledge. Second, systems of bureaucratic accountability tend to reward success and punish failure. This encourages a defensive culture in the organisation, where issues are obscured and problems hidden. The capacity to learn may in turn be affected by the power and dominance of professional groups. It is only through reform that institutions can remain relevant to society.

Decentralisation

Decentralising governance can be one of the best means of promoting participation and efficiency. Through this process, politicians and officials can be much more open to public scrutiny and more accountable to the communities they are supposed to serve. Decentralisation can take two main forms. Horizontal decentralisation disperses power among institutions at the same level while vertical decentralisation, which is more important and fundamental to improving governance, allows some powers of the central government to be delegated downwards to lower tiers of authority.

One benefit of decentralisation is that local governments, being closer to the people and more responsive to local needs, make better use of resources and as a result will direct them to human priority concerns such as basic education and primary healthcare. Numerous case-studies show that decentralisation favours expenditure on human development and is a vehicle to both economic and social development (UNDP 2005). In theory, decentralisation should improve efficiency, as projects would be able to match local needs. Involving local people can result in a more appropriate structure of services, especially in healthcare, and this can have a very important ripple effect. Local involvement also opens up the opportunity for people and companies to add voluntary contributions to amplify a programme or project's impact and it calls for the increased use of public-private partnerships. Devolving greater power to regions can improve equity if managed efficiently and effectively, as poor people generally make more use of local public services. However, decentralisation can

increase disparities between various regions and districts unless the government takes strong action and ensures that the programme of decentralisation is well planned and compensatory action is provided to the other regions. Decentralisation can also increase economic participation by facilitating local entrepreneurial activity and thus increasing employment and ultimately generating economic growth. This can take place through increased public expenditure on local infrastructure, higher-quality services and better support for entrepreneurs.

Decentralisation of local government has the potential to improve government decisions with increasing democratic participation. As decisions are brought closer to the people they affect, expenditure on priorities increases, thus contributing to economic and social development.

3.6.3 Third-order governance

Since governance is all about interactions between different actors, principles and values are needed to guide their behaviour (Kooiman 2003). Values and principles are always needed, at all levels, not only to steer behaviour but also to guide decision-making. Principles come before means and goals. They determine which goals are valid, ethical and reasonable (Kooiman et al. 2005). Governors and stakeholders should start by identifying the fundamental principles and go on from there to deduce the goals to be pursued before they finally turn to the means. Principles also can serve as a yardstick, something to relate to when we evaluate and criticise current governance systems and practices and suggest reforms. In interactive governance, given the multi stakeholder approach, articulating the underlying principles provides transparency and helps to achieve consensus between stakeholders (Bavinck et al. 2005).

A number of key values and principles that should underlie policy-making are outlined below.

Sustainability

During recent years, sustainability has become a widely used concept in all policy fora. This notwithstanding, it is still described as 'one of those motherhood concepts that is hard to oppose, but difficult to pin down' (Sumner 2002). Seen as a multifaceted and cross-cutting concept, sustainability is seen as a goal, a condition, an ethic a process and even a management practice. Two definitions of sustainability are in widespread use. It is seen as development, which 'meets the needs of the present without compromising the ability of future generations to meet their own needs' (Brundtland 1987); and as 'a kind of development that provides real improvements in the quality of human life and at the same time conserves the vitality and diversity of the Earth' (International Union for the Conservation of Nature [IUCN] 1991). Sustainability is also important for small states because of their inherent vulnerability and limited resources and is a major policy concern and focus (UN 1994, 2005).

Efficiency and frugality

The efficient use of public resources and high-quality fiscal policies for economic growth and stability has become a prime policy concern. Various developments,

heightened by the global economic crisis, have exerted even more pressure on national budgets. Small island states suffer from a limited resource and talent pool, which further calls for the efficient use of resources (Sutton 2006). Popular sentiment also calls on governments to be efficient in resource use.

Respect

Respect plays a central part in ethical theory and is a common moral notion linked to the philosophical school of thought pioneered by Immanuel Kant, who argued that all human beings have dignity which is independent of rank or merit in society (Kooiman et al. 2005). One's respect for the autonomy and dignity of a person is mirrored in the idea of legislating for positive freedom. This respect for individual autonomy does not differ from respect towards the autonomy of collectives and institutions. This means that the laws that are enacted by society apply to all; no one is above the law. Respect for people, society and its institutions is reflected in the well-known political concept of rule of law.

Equity

Equity is closely related to concepts such as fairness, justice and equality. Since antiquity and deeply rooted in traditions and religions all over the world, equity has had, and still has, an important position in legal and philosophical thinking. As a concept, equity has a place in law and is also featuring heavily in international policy fora (Kooiman et al. 2005).

Legitimacy

It is assumed that systems or processes that enjoy a high degree of legitimacy have a higher probability of achieving the stated goals (Kooiman 2003; Bavinck et al. 2005; Kooiman et al. 2005). Legitimacy fosters support and participation and people will be willing to contribute once they agree to the rules and regulations that are enacted.

Inclusiveness

Participation and inclusiveness are both a fundamental goal and object of value in and of itself (Kooiman 2003). It is now assumed and expected that inclusive policy-making and decision-making are treated as fundamental rights. The Arab Spring has shown the yearning of people to participate in decision-making and policy-making. Participation is also crucial for achieving other primary goals and for governments to respond directly to the needs of its citizens. In particular, participation can help to deepen democracy, strengthen social capital, facilitate efficiency and sustained growth, and promote pro-poor initiatives, equity and social justice.

Integrity

Integrity is a value and principle that society expects those elected or appointed to public office to adhere to. These standards are what safeguard the nation from corruption by politicians and public officials who have been given almost unrestricted access to public resources together with the power to take decisions that impact on

the lives of everyone and the nation as a whole. It follows that those in positions of power can use these positions to take decisions that are solely in the public interest or they can use them to benefit themselves, friends and, in the case of politicians, their party supporters to the exclusion of others. People demand that their elected representatives show integrity in conducting their duties.

Long-term orientation

To be effective, policy-making needs to be long-term in nature. Policies need to be seen as building blocks of a long-term vision for the country. Policy-makers who view their policy-making time horizon as being directly related only to their term of office will not be making an effective contribution to development. As a result, it is important that policy-makers value the long term more than the immediate.

3.6.4 Conclusion

This section has analysed in depth the second component of the governability assessment framework that is being proposed. The governing system component looks at institutional framework in which actors operate and, based on the interactive governance model, it is made up of three orders of governance. Each order has been analysed and further broken down into a number of elements. A summary tree of all indicators is presented in Figure 3.12.

The conceptual framework is now complete, as the main elements and their respective subdivisions have been presented. The next section deals with the methodological aspect of the framework and the assessment procedure.

3.7 Operationalising the framework

The assessment framework developed in the previous section has the potential of providing a comprehensive and wide-ranging analysis of governability. Given its extensive coverage, an assessment procedure is being proposed for the analysis to be implemented in countries. At the core of the procedure lies a questionnaire that is based on all the elements discussed in the previous section. This section will first look at the assessment procedure being proposed before focusing on the questionnaire and the statistical methodology adopted.

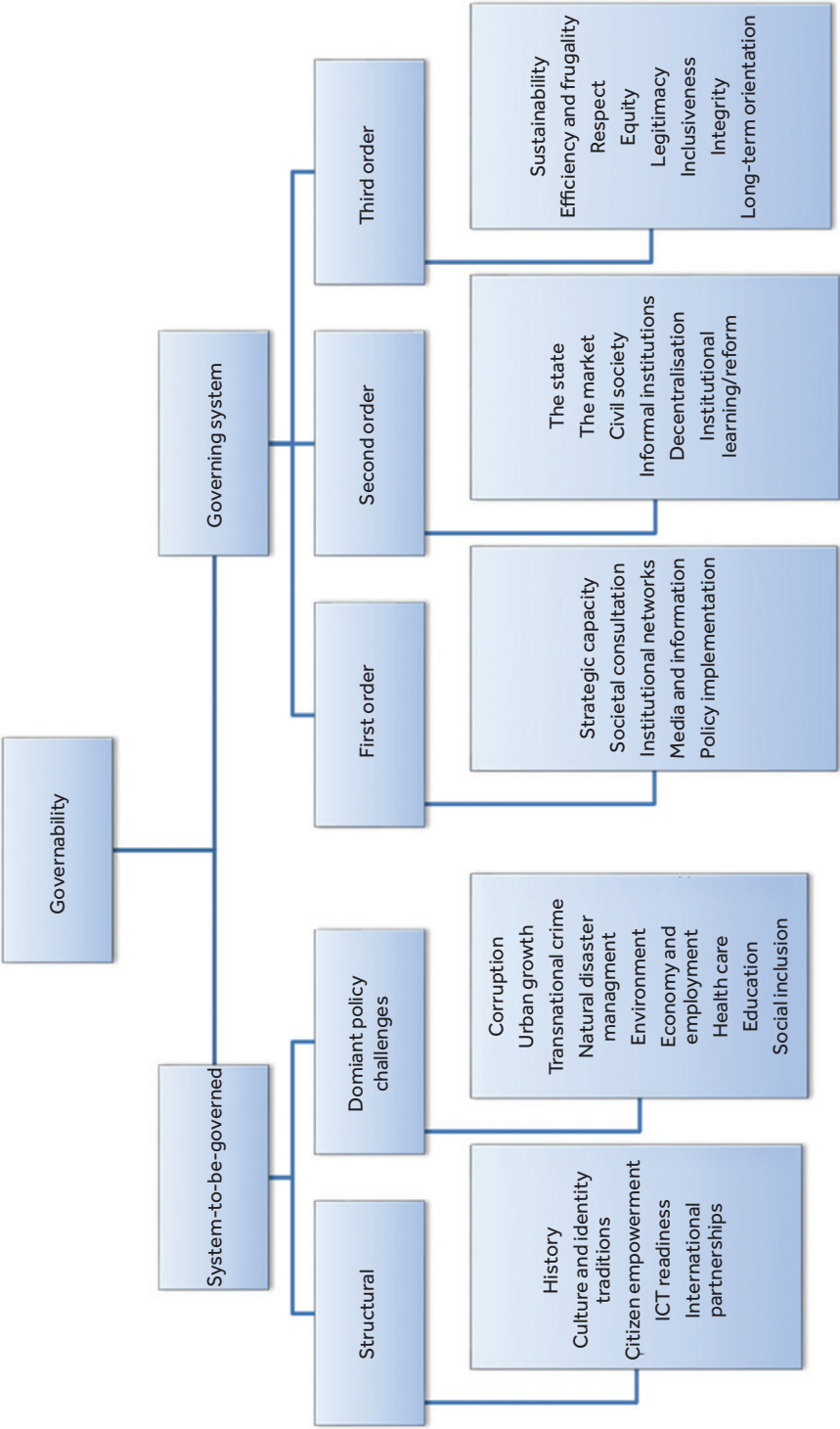
3.7.1 The assessment process

The process being proposed is a multi stage assessment procedure for each country being analysed. A schematic of this procedure is illustrated in Figure 3.13. Each phase is outlined briefly below.

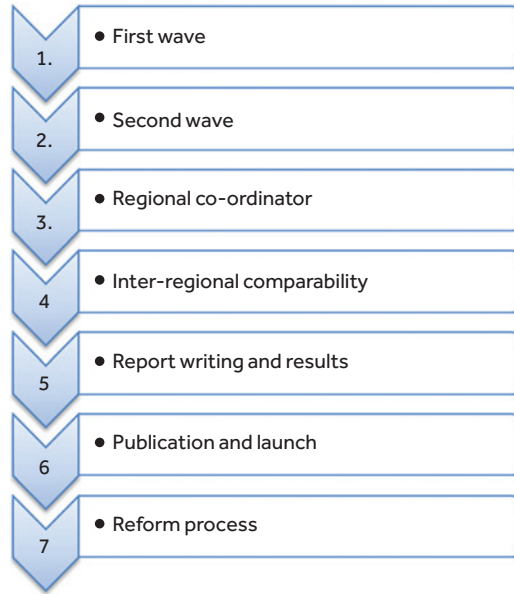
First wave

The country experts who will initially answer the questionnaire are chosen and briefed about the assessment. Experts will have access to the survey questions and the

Figure 3.12 The governability assessment framework



Source: Fabri.

Figure 3.13 The assessment process

Source: Fabri.

tailored responses to each question. It is envisaged that a compendium of additional sources will be developed which can guide experts to accessing statistical data or any other relevant indicators that are relevant to the process. A similar procedure to the one used by the ‘Governance Diagnostic Surveys’ developed by Kaufmann et al. (2002) can also be used. The procedure involves getting responses to the survey from a wide set of people and not just country experts. In this case, responses from different users and actors such as citizens, business men and women, public officials and actors from civil society will be collected. This will allow cross-checking of the responses of all these groups as illustrated in Figure 3.14.

Second wave

The second wave will be identical to the first; however, different people will be asked to answer the questionnaire independently from the first wave. Such people will not have access to the results of the first wave. The idea is to get a second independent assessment.

Regional co-ordinator

A regional expert will be selected as co-ordinator and will have access to both waves of responses. This will allow the calibration of the results within the ranges of both waves. The regional co-ordinator will be able to contact the experts chosen in both waves on points of disagreement and to find a common position. A regional analysis will then be computed on the basis of the different country assessments.

Figure 3.14 Groups interviewed under a diagnostic approach

Source: Fabri.

Inter-regional comparability

If a number of assessments in different countries and regions are being carried out simultaneously, regional co-ordinators should meet to review and discuss the ratings across regions.

Report writing

On the basis of the assessments, a detailed country report will be finalised which sheds light on the findings but also provides a roadmap for the reforms needed to improve its governability standing.

Publication

The final report must be published and made accessible to all governance stakeholders. National conferences and workshops on the findings can be organised as well as a presentation of reform strategies to government. All data and assessments will be made public.

Reform process

For the assessment process to bear fruit, it must be accompanied by a reform process that will be implemented and monitored. This delicate process must be legitimised as much as possible through the participation and involvement of all stakeholders. Regular feedback needs to be given on the progress of the reform process.

Conclusion

The assessment methodology has a universal application and it is envisaged that a guide book for assessors will be developed. The main aim of the assessment is to

identify strengths and weaknesses and to identify reform priorities. In order to do so, a questionnaire based on the framework developed is proposed.

3.7.2 The questions

To operationalise the assessment framework, a set of questions was developed for each component and dimension of the framework. This concept borrows from the method utilised by the Bertelsmann Stiftung to compute the Sustainable Governance Indicators.

The questions that have been developed have four distinctive features, which are discussed below.

The first feature is that all questions are broadly framed and thus provide room for all relevant issues. Second, questions are presented in a comparative mode and this is based on the belief that governability is a matter of degree. One can speak about a continuum of governability as opposed to a binary measure of governability. A third feature is that the questionnaire provides tailored response options for each question. Respondents are instructed to adopt the standardised response options, which are based on a rating scale ranging from 1 to 10, with 1 being the worst and 10 being the best. The scale is differentiated by four response options provided for each question. The fourth feature is that each assessment question addresses a different aspect of the thematic area being examined.

3.7.3 Weighting and aggregation

Given that the assessment is based on a questionnaire with a unified scale from 1 to 10, no standardisation is required prior to aggregation. In order to aggregate, a weighting procedure is required. The equal weighting method was chosen and an additive method of aggregation was adopted for the components and subcomponents. All variables were given equal weighting and the simple average of the indicators was taken to build the respective components at each level. This method was chosen because all the variables making up the composite index were deemed to be of equal importance to the concept being measured. This method is in line with the methodology proposed by the *Handbook on Constructing Composite Indicators* (Joint Research Center of the European Commission-OECD 2005).

3.7.4 Conclusion

The framework and the accompanying questionnaire are simple to implement and operationalise. This section has given an overview of the procedure and methodology that are being proposed. The next section will look at some ways forward on implementing and further developing this governability assessment framework.

3.8 Case study: governance profiling for Malta

Malta, a small island state in the Mediterranean, has a Westminster system. Having gained independence in 1964, successive Maltese governments sought to nurture economic resilience by building a diversified economy. In 2004, Malta became a member of the European Union and in 2008 it adopted the euro. Today, Malta is

considered as a prime example of the ‘Singapore’ Paradox, a term which was coined to describe successful yet highly vulnerable states (Briguglio 2003). Malta has been placed consistently in the best-case quadrant developed by Briguglio et al. (2006).

An initial analysis using the Governance Assessment Framework is presented below.

3.8.1 Overview

Malta obtained an overall average score of 6.6 through the Governance Assessment Framework. Although Malta is usually considered to score high on governance, its performance can be described as modestly above average through this method. While performing better in the system-to-be-governed dimension, Malta seems to have done slightly less well in the governing system category as illustrated in Figure 3.15.

3.8.2 System-to-be-governed

As the two dimensions have equal weighting, Malta’s structural element contributed significantly to the 6.9 average score in the system-to-be-governed indicator (Figure 3.16).

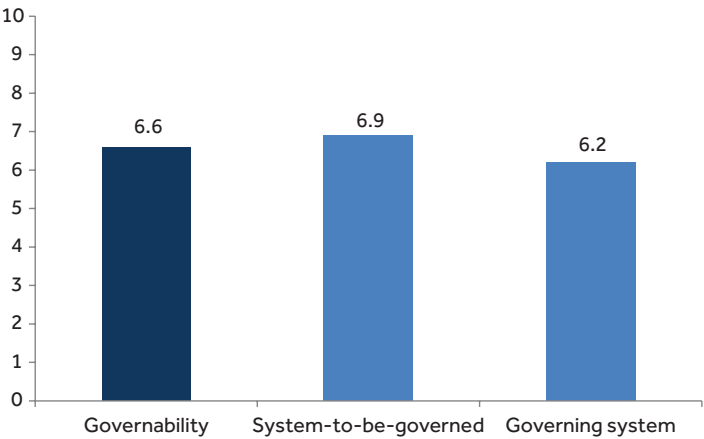
Structural elements

The structural element is made up of six elements which group 22 indicators. Malta performs well in all categories, reflecting its long and stable institutional history. Figure 3.17 illustrates the scores registered under the structural element.

Traditions
(Score 7.3)

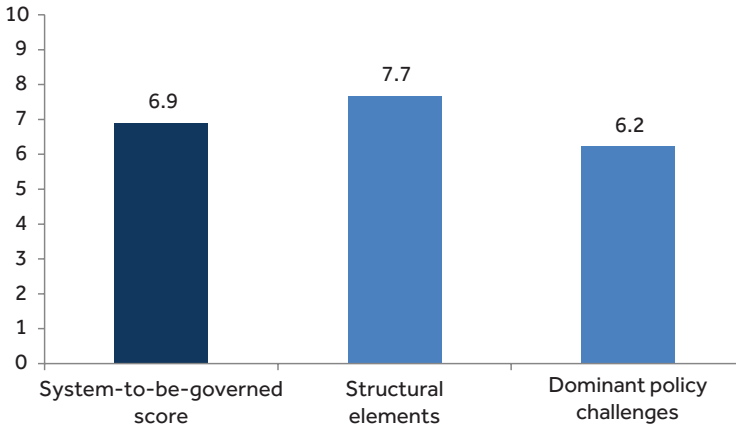
With an average of 7.3 from three dimensions, Malta performs particularly well in two of them. In terms of perceptions, it is felt that traditional groups can co-exist well in Malta and in line with this they do not feel marginalised. However, it was felt that such groups play a marginal role in society and that maybe governments can build more on this.

Figure 3.15 Malta's overall governance scores



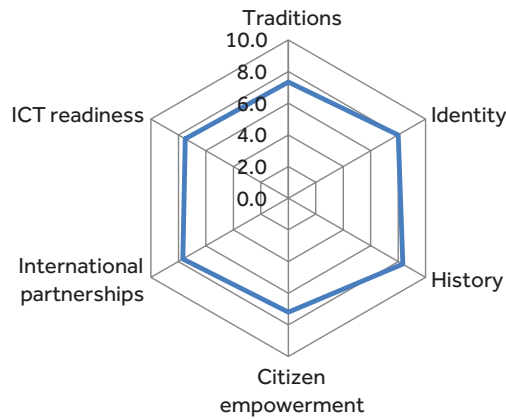
Source: Fabri.

Figure 3.16 Malta's system-to-be-governed score



Source: Fabri.

Figure 3.17 Malta's system-to-be-governed structural dimension



Source: Fabri.

Identity (Score 8.0)

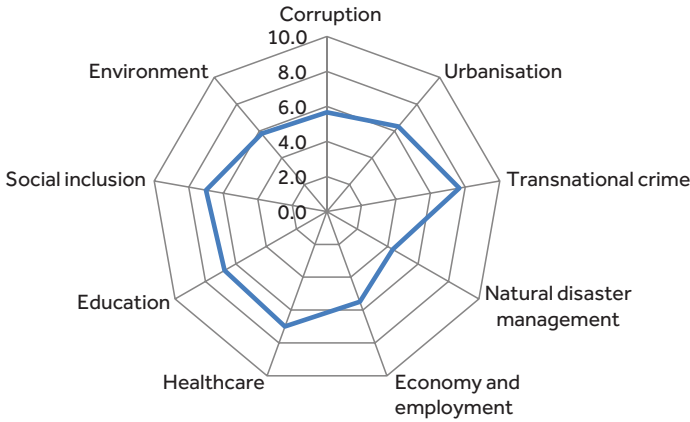
Malta performed well in the identity dimension, registering an average score of 8. There is a strong collective sense of identity in Malta, although this might change over the years. Although in the past there has been agreement on Malta's common set of values, society has been changing rapidly over the past few years. However, the survey found Malta to have made considerable efforts towards achieving common values, scoring a value of 6. Religion was found to be a unifying factor in Malta, although the influence of the church is no longer as strong as it used to be.

History (Score 8.3)

As expected, Malta scored well in the historical element. Malta has a long history of institutional development and its 164 years of British rule served as a good foundation for the development of a Westminster system after independence. In fact it scored high

	in the three sub elements of history, which are stability, lack of violence and democratic tradition. Membership of the European Union also helped Malta to enhance its democratic credentials.
Citizen empowerment (Score 7.2)	Grouping six indicators, Malta scores an average of 7.2. In terms of degree of involvement of its citizenry, Malta scores a mere 5. Despite high voter turnouts, this interest dissipates straight after elections. On the other hand, Malta performs well in three categories which are looking at the protection of fundamental freedoms, property rights and protection against discrimination. Malta scored a moderate 6 on civil rights. However, since the survey was completed Malta has advanced in this area since government legislated in favour of civil unions and adoptions for gay couples. In the sixth indicator, access to justice, Malta scores high.
International partnerships (Score 7.7)	Malta plays an active role in a number of international organisations and partnerships, most notably the European Union. It is also a member of other international organisations such as the Commonwealth, IMF, World Bank and others. It scores relatively well, 7.7, in this structural dimension, which has three main elements to it. Like all other small states it faces a resources constraint and it therefore needs to dedicate more resources to these partnerships.
	In terms of funding access, Malta has managed to leverage its European Union membership to avail itself of substantial amounts of funding, which in turn have been invested in various projects and programmes. Finally, there is a deep-rooted sense of willingness to continue to work closely with these institutions and organisations which highlights the government's willingness to co-operate and share best practices as well as to continue utilising funding programmes for the benefit of the country and its people.
ICT readiness (Score 7.5)	Malta is considered by many to be a success story in terms of e-government and harnessing the power of ICT in government and beyond. Through this assessment, Malta scores considerably well with an average score of 7.5 that covers four indicators. Malta scores high in terms of access to ICT, as close to 80 per cent have access to internet at home. There was also a drive towards e-government programmes and in fact Malta scores 7 in terms of government accessibility, which is expected to increase as more services are migrated online. In the third indicator, national strategy, Malta also scores high as ICT strategies were key drivers not only for government but also for the development of the ICT industry in Malta. This policy has been reviewed and updated accordingly.
	In terms of ICT in communities, a lot has been done but there is always room for improvement. Local councils have been entrusted with this function and several councils have ICT facilities and free Wi-Fi besides offering ICT literacy courses.

Figure 3.18 Malta's system-to-be-governed dominant policy challenges dimension



Source: Fabri.

Dominant policy challenges

In addressing the dominant policy challenges, the second dimension of the system-to-be-governed composite indicator, Malta scored 6.2 out of a maximum of 10. Having nine main policy challenges and 34 indicators, Malta performs modestly well in this area. An overview of the indicators is illustrated in Figure 3.18.

Corruption (Score 5.7)

Malta scores a mere 5.7 in addressing corruption, reflecting the perception of high corruption in Malta. In fact, several high-profile cases of corruption in public authorities came to light in 2013 further cementing this perception. With three indicators to it, Malta performs particularly low, scoring a 4, in the legal frameworks particularly relating to enforcement. Malta also makes an average score of just 5 on the prioritisation of targeting corruption. However, corruption is expected to be given a high priority in the near future. Finally, corruption is not tolerated in Malta and there is a public sentiment against corruption.

Urbanisation (Score 6.3)

Malta scores an average of 6.3 for urbanisation, which is composed of three subindicators. With an already urbanised environment, the administrations seem not to focus much on the challenges that urbanisation will bring about in Malta and have not dedicated the necessary resources to tackle particular stresses on heavily urbanised localities. In tandem, there does not seem to be a properly devised holistic plan on how to tackle urbanisation in such localities, with piecemeal solutions being the order of the day. However, all in all, there does not seem to be any stress on the national governance system emanating from urbanisation.

Transnational crime (Score 7.7)	With its location bordering Europe, Malta can be an attractive destination for such networks to establish themselves. This notwithstanding, Malta scores relatively well in this indicator with an average score of 7.7, signifying that it has significant capacity to deal with transnational crime networks. Its weakest link is the lack of resources; however, this is set to improve as the police force continues to absorb additional European Union funding to invest in equipment and training. On the other hand, Malta performs very well in both regional co-operation and legal frameworks.
Natural disaster management (Score 4.3)	Although an island state which remains inherently susceptible to natural disasters, Malta scores below average in this dimension. Although scoring well, 7, in contingency planning and crisis management, Malta remains limited in resources. However, as the armed forces, police corps and civil protection department continue to invest in equipment through European Union funding, Malta is expected to improve its situation in terms of resources. The absence of an early warning system is Malta's biggest weakness in this regard and as a result pulls down the average score of the composite indicator.
Economy and employment (Score 5.5)	Having a sustainable and diversified economy is critical for small states such as Malta. Although considered to be one of the most successful small state economies, Malta scores a mere 5.5 through the expert analysis of six sub indicators. Economy and employment are usually given considerable priority; however, given the improvement in competitiveness in neighbouring countries more effort has to be made in this area. It is for this reason that Malta registered a 6. This score was also registered for the diversification sub indicator. Although Malta has successfully diversified across a number of sectors, establishing varied industries such as financial services, tourism, manufacturing and aviation maintenance, more effort needs to be made to continue this diversification. New industries have still to be identified and promoted so that Malta's economy continues to reinvent itself. Malta continues to be an attractive location for investment; however, given the internal devaluation that many close competitors have implemented, safeguarding this investment attractiveness is crucial. Therefore, more effort needs to be made for Malta to retain its competitive edge. Malta scores low, a mere 4, on the labour market policy count. Although Malta has been performing well in terms of employment figures, there has been a lack of active labour market policies. However, the present administration has just launched a revised employment policy which adopts an active labour market policy stance. Even in the enterprise policy domain Malta registers a mere 5. Although the

enterprise policy focuses mainly on incentives and grants, there is a lack of focus on entrepreneurship and innovation. Even in this case various initiatives are being launched and include an innovation incubator by the University of Malta, government funds and schemes, and other initiatives being undertaken by the private sector. The last indicator is fiscal policy and sustainability and Malta performs reasonably well with a score of 6. Still registering a less than 3 per cent of GDP fiscal deficit, Malta's fiscal position is considered to be good; however, more action is needed to lower the debt.

Healthcare
(Score 7.0)

Malta offers a free health service and has reached very high levels of quality. This is reflected in this assessment, as healthcare registered an average score of 7. Since the system is state-funded and accessible to all, Malta scores very high in terms of access to healthcare. However, it scores a mere 5 in terms of policy efficiency and effectiveness. Although the infrastructure is in place, Maltese healthcare seems to be plagued by a management crisis which is compounded by a lack of human resources. There is also a lack of synergy between public and private operators, although it seems that collaborations have started. The lack of financial contributions by users can also result in wastages and inefficiencies. Finally, in terms of investment Malta scores high as government invests a substantial annual budget to sustain the health service. In addition, an investment in an oncology centre is nearing completion and investments in new local health centres and an extension to the national hospital are also being discussed.

Education
(Score 6.8)

The education sector is mainly run by the government although the church and private schools do play an important role. The government provides free education to students including at university level. As a result, the public sector plays a leading role in the provision of education. Consequently, Malta scores highly in terms of access to education. In terms of policy development, the government has always been at the forefront of education policies and in implementing new teaching methods and this is reflected in the high score Malta achieved under the policy sub indicator. This notwithstanding, Malta still has a moderate illiteracy rate and, given all the investments that have been made, the statistics cast doubt on the effectiveness of the government's efforts to reduce illiteracy and that is why it registered a score of 5. Finally, Malta also registered a mere 5 in the response of educational institutions to the changing needs of society and the economy. It is felt that educational institutions can respond more to the changing needs and requirements of industry.

Social inclusion
(Score 7.0)

Malta's welfare system is well placed to sustain and promote social inclusion policies. Malta's social policy is well aligned and further reforms are expected to strengthen this sector through a more holistic and inclusive approach. In terms of priority, it has always been a central tenet of past governments and in fact Malta registers a 6 in this indicator. However, it is expected to improve further given that both the government and the newly appointed President of the Republic have stated their intentions to focus on social inclusion. In terms of female participation, Malta has made a lot of progress in this area and scores very well, as a number of measures, incentives and schemes were implemented to support female participation. Family-friendly measures together with tax breaks to incentivise female participation in the labour market have contributed significantly. Further effort is needed to sustain these increases. In terms of integration of minority groups, positive measures were introduced, especially through the activism of civil society. However, in the absence of a formal integration policy, more needs to be done, especially about third-country nationals.

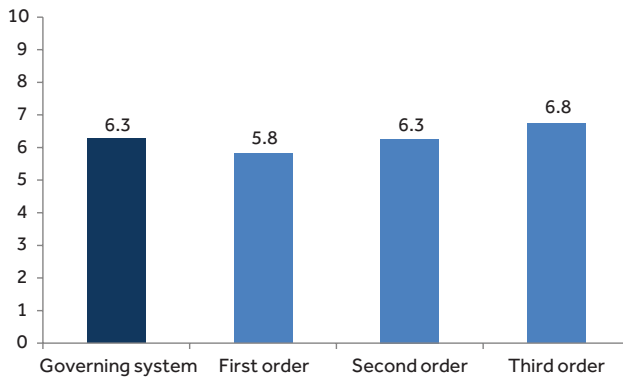
Environment
(Score 5.6)

The environment has become a central tenet of Maltese policy-making and politics. After years of it being neglected it has found itself on the agenda of Maltese policy-making thanks to the efforts of civil society in increasing society's consciousness of and interest in the environment. Although large investments were made in the sector through the use of European Union funds, the policy-making domain is not yet fully developed and holistic. It is for this reason that Malta scores a mere 5.6 in this sector, which has progressed immensely throughout the years. However, in terms of policy-making a rather piecemeal approach can still be observed and this accounts for the low rating of 5 in the policy indicator. The lack of a holistic strategy denies the possibility of achieving synergies in different areas. In terms of resources and education element, Malta scored 6. Although Malta has effectively utilised European Union funds for investment in environment, local resources are somewhat stretched. In terms of civic education on the environment, there is still a lot to be done. Education programmes focused on school children have been well received especially in terms of waste management. However, broader programmes need to be introduced for the population to be committed towards environmental protection. On the enforcement side, legal provisions do exist; however, enforcement needs to be further strengthened to be effective.

3.8.3 Governing system

The governing system indicator is composed of three sub indicators with equal weighting. Malta performs moderately well and registers a composite score of 6.3. The governing system indicator critically assesses the interactions between different actors in society and is based on three orders of governance, which are analysed in greater detail below. Figure 3.19 illustrates the governing system indicator.

Figure 3.19 Malta's governing system indicator

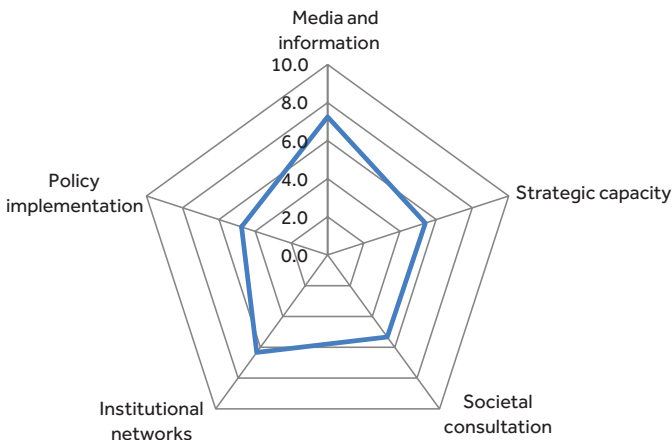


Source: Fabri.

First-order governance

Within the governing system indicator, Malta performed worst in the first-order governance dimension, scoring a mere 5.8. First-order governance seeks to shed more light on the running of day-to-day matters and is mainly concerned with the way societal problems are solved and opportunities are created. First-order governance is measured through five different dimensions and with a total of 19 leading questions. The overview is presented in Figure 3.20.

Figure 3.20 Overview of Malta's first-order governance



Source: Fabri.

Media and
information
(Score 7.3)

In this dimension Malta performs considerably well, achieving an average score of 7.3 from four indicators. Although there are laws that seek to guarantee the independence of the media from the incumbent government, there is still a degree of influence. However, there is a redress mechanism for complaints. Despite having a pluralist media framework, the market of a small state remains constrained and not very diversified since the media houses of the political parties largely dominate local media. This notwithstanding, there is a good balance of opinions through the independent media. In terms of freedom of information, improvements have been registered in this domain, as the Freedom of Information Act was enacted only recently, giving citizens the right to have access to official information.

Strategic
capacity
(Score 5.4)

In terms of strategic capacity, Malta scores poorly, registering a score of 5.4. This composite indicator is made up of five different elements and Malta faces particular challenges in this area. Strategic planning seems to have only a modest influence in Malta. Although governments are elected on a five-year plan, there is a lack of long-term strategic planning which will then be used to base the five-year programmes on. Although strategic planning happens in individual sectors which need a long-term approach, such as waste management, there seems to be a lack of such planning across sectors. During the policy-making process, independent experts are used; however, they are still underutilised. Transparency on the choice of experts is often cited in the media, since most experts are usually close to the party in government. Expert commissions or forums can also be considered as important catalysts in policy-making. This ties in with the third indicator, the use of evidence-based instruments. In this aspect, Malta scores just the average of 5 as they are moderately used. The fourth indicator looks specifically at the centre of government. Although emphasis has always been placed on building a strong core, especially in the Office of the Prime Minister, it is still lacking some resources. Over recent years, the Office of the Prime Minister took a more active role in specific policy areas and reforms moving away from just coordinating government. However, for it to be an effective centre of government, more resources need to be channeled. Finally, ministries are not properly co-ordinated with each other. Although they follow the Cabinet decisions, they remain largely autonomous in policy implementation. In order to improve the coordination of different ministries a specific Policy Secretariat was set-up and was tasked with inter-ministerial coordination of policy papers and reforms. However this Secretariat was dismantled after the 2013 election.

Societal
consultation
(Score 5.3)

Policy consultation has definitely increased over the years, especially since EU membership. However, it remains a challenging area for Malta, as consultation needs to be further entrenched during the policy-making process. Recent controversies in policy-making decisions show that consultation is not really entrenched and is concentrated prior to elections. In terms of formal consultation, social partners are consulted on policy matters prior to decision-making. Social partners often criticise the consultation period as being not truly consultative but more communicative of ready-drafted policies. On the other hand, governments open consultation periods once a draft policy or strategy is launched. The consultation is usually open for a number of weeks and people and interested parties can attend specific meetings as well as submit comments through various channels. Informal channels such as websites and dialogue meetings are common, and the government has established a formal consultative council, the Malta Council for Economic and Social Development. Although the Council groups all the social partners and meets to discuss national priorities, it is not adequately resourced to be able to perform its function effectively.

Institutional
networks
(Score 6.3)

With an average score of 6.3, institutional networks are considerably developed in Malta. EU membership has facilitated the establishment of such networks between various actors across levels and efforts at streamlining processes have been made. There exists a considerable spirit of co-operation between different institutions and actors in Malta; however, synergies are not well established and unfortunately duplication of work and effort still exists. Although advances have been made through the use of technology, management structures and business processes did not move in tandem to open up significant areas of opportunity in creating and enhancing institutional synergies. Notwithstanding the improvements that were achieved in institutional communication through the various structures that have been created, a business re-engineering process will also lead to enhanced institutional communication.

Policy
implementation
(Score 4.8)

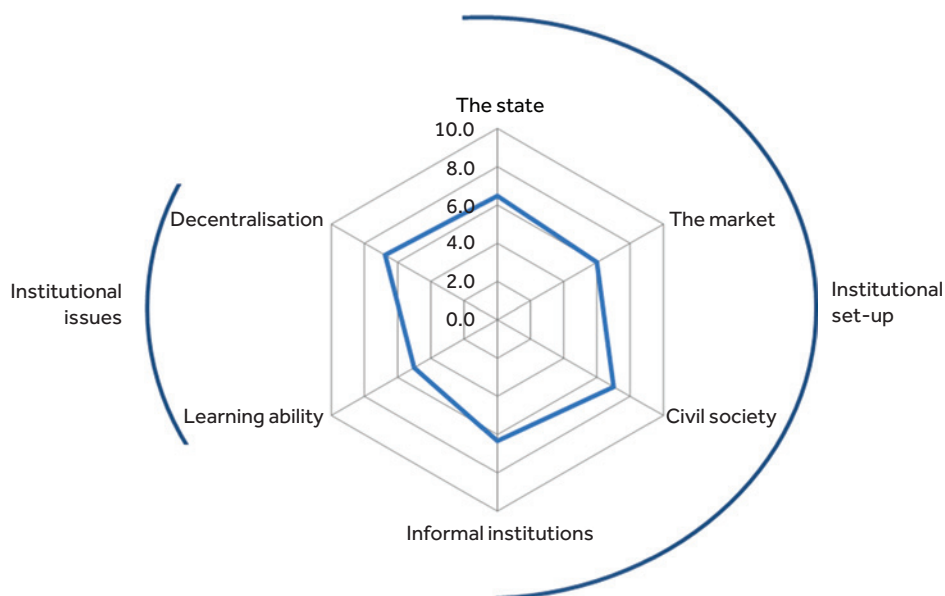
In many circumstances Malta's public service lacks the adequate capacity for effective and efficient policy implementation. This is reflected in the low score Malta achieved. Implementation monitoring is very limited and there is a need for a centralised monitoring unit which will co-ordinate and monitor the implementation of large-scale projects and policy reforms. This lack of monitoring is pervasive not only during the implementation phase but also during the evaluation phase. Performance benchmarks need to be set up against which performance is monitored and evaluated. Poor monitoring during implementation will also lead to objectives not being met.

Budget control has improved significantly and the occurrence of large budget overruns has reduced; however, better planning and monitoring will contribute to better financial planning. The government internal audit function has been strengthened considerably and is today an important catalyst in reforms and in improving work practices. However, in all dimensions EU membership has contributed immensely to improving Malta's capacity to implement projects and policies. It is expected that as governments continue to invest resources in capacity building, both in terms of human resources and more importantly in organisational design and business processes, Malta's performance in this dimension will also improve. However, challenges remain.

Second-order governance

The composite indicator of second-order governance looks at the factors enabling problem-solving or opportunity-creating practices and can be best described as the design, care and maintenance of these institutions that control or enable interactions to take place between actors. Registering an average score of 6.3, Malta still faces challenges. Figure 3.21 illustrates the main overview of the indicator, which is composed of two composite indicators: an institutional set-up indicator that registered an average score of 6.5 and the institutional issue indicator with an average score of 5.9. The sub indicators will be analysed in further detail below.

Figure 3.21 Overview of second-order governance in Malta



Source: Fabri.

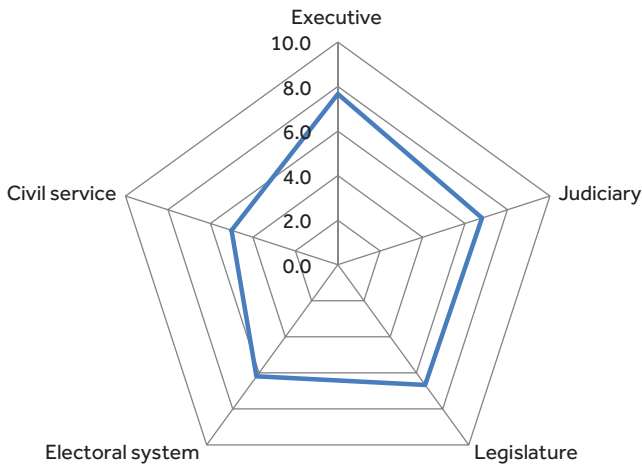
The state
(Score 6.5)

The state indicator encompasses five sub indicators and 25 leading questions. Malta scores an average of 6.5 in this composite indicator and one can conclude that the state as an institution performs very well. A detailed analysis of the sub components is given below, together with a graphical overview as shown in Figure 3.22.

Executive
(score 7.7)

The executive in Malta has developed over time and today is a well-functioning institution at the apex of the governing system. The executive is usually well resourced to implement its mandate and the prime minister has the prerogative of forming a cabinet of ministers. Portfolios are assigned to each minister, who in turn forms a private secretariat of trusted persons and experts to implement the government's mandate in the assigned portfolio. In addition, the cabinet of ministers has a Cabinet Office that supports its work. In terms of accountability, the executive is accountable to parliament through a number of channels, which include committees and constitutional roles such as the Auditor General. Opposition members engage in parliamentary questions, which are also followed up by the media, and the various reports undertaken by the Auditor General are a testimony to the accountability of the executive. The independent media are also able to hold government accountable to its mandate. Finally, although winning elections with a slim majority can induce instability, as seen during the 1996 and 2008 legislatures, the executive has been largely stable through the years.

Figure 3.22 Overview of 'the state as an institution' indicator for Malta



Source: Fabri.

Judiciary
(Score 6.8)

The judicial system is totally independent from government and impartial and this freedom is safeguarded through a number of constitutional provisions. This is especially true of the appointment of judges. Although judges are appointed by the president acting in accordance with the advice of the prime minister, constitutional provisions safeguard their independence. However, Malta's judicial system is beleaguered by lack of resources and funds, making it difficult to operate effectively. Work practices have not embraced technology, and court cases are known to take unnecessarily long. This has been reflected in the EU Justice Scoreboard, which concluded that Malta has the least efficient judicial system. Although Malta scores poorly on this count, a reform process is under way which is already introducing new work practices. The Maltese police force has strengthened its resources and capacity to deal with its duties. Investments in human resources and equipment have transformed the police force into a modern and professional force.

Legislature
(Score 6.7)

Although Malta's parliament has been strengthened, the biggest disadvantage the legislature faces is that legislators are not full-timers. Over the years, various committees were set up by governments to strengthen the function of parliament and today parliament has seven committees out of which only one can be described as a monitoring committee, the Public Accounts Committee. However, the committees lack resources and it is up to the individual members to research and take an active interest in the work of the committee. Although parliamentary committees can summon experts to make presentations or to participate in ongoing discussions, committees can be precluded from calling ministers or members of parliament before a committee-stage vote is taken. Parliamentary scrutiny is enhanced through the National Audit Office, which is independent and reports exclusively to parliament. The Office still requires more resources to be able to operate effectively. The same can be said about the Ombudsman Office, which also has a number of specific commissioners – for health, education and the environment – and they too report exclusively to government. Although the Ombudsman investigates a number of alleged cases of maladministration, it has no enforcing powers. Finally, the parliamentary structure considerably reflects the social composition of the electorate. In terms of the resource capacity of parliament, Malta is relatively weak. Apart from having part-time legislators, parliament has only a small back-office, which is occupied by parliamentary business and is not dedicated to research or supporting legislators.

Electoral
system
(Score 6.2)

Malta's electoral system is regulated by the constitution and by law. The legal regulations provide fair rules and procedures for registering candidates and parties, and minimal restrictions exist. Candidates can stand either as independents or as representing a political party. Malta's electoral laws are in fact effective and impartial and, despite not having a legal obligation to vote, turnout at general elections is very high. Although Malta boasts a pluralistic media with a mix of state and independent media, parties and candidates are not all given the same treatment. Smaller parties or independent candidates are given coverage on state television, but there is a wide discrepancy between the smaller and larger parties. In addition, the two large parties both have their own media channels including radio and television stations as well as newspapers. Regulating political parties remains a key challenge for Malta as there are no party financing laws and no regulatory or monitoring body. It remains up to the discretion of the political parties whether accounts are published. However, a draft law has been presented to fill this lacuna and is up for consultation. The established political parties have a long history and are inclusive if members adhere to the main principles of the party. Parties have also developed over the years in terms of policy proposals as the electorate has become discerning. The electoral programmes are usually the result of various consultations with stakeholders and civil society. As result, parties offer plausible, reasonable and coherent policies and since the 2013 elections, the main political parties started to cost their proposals.

Civil service
(Score 5.0)

With an average score of just 5, the civil service remains a particular challenge. Over recent years, following accession to the European Union, the civil service has undergone a deep structural transformation with new procedures, structures and an ever-increasing workload. The profile of the typical member of the civil service is also changing as new young graduates continue to climb ranks. However, given the requirements of the civil service, it requires more resources to be able to perform its duties effectively. The generational change and the ongoing structural transformation are improving the work ethos and drive of the civil service to deliver its services efficiently, but the challenge remains. Although the Public Service Commission has introduced a system of examinations for promotions together with an extensive training programme, the perception is still that the civil service is built on meritocracy to some extent but more influenced by political connections. Although several inroads and advances have been made in innovative service delivery, mainly through e-government, more needs to be done to improve innovation and to introduce new business processes. Excessive

bureaucracy and duplication of services still beleaguers the civil service. Closely related to this is the issue of organisational design, which unfortunately does not allow the civil service to be agile. This lack of flexibility might compromise its ability to reap opportunities and tackle upcoming threats. The Office of the Ombudsman investigates a good many complaints.

The market
(Score 6.0)

Although small in size, the Maltese market has evolved and matured over time as a key policy player. Business leaders have formed a strong Chamber of Commerce and Industry, which has established itself as an active and professional stakeholder in the policy-making process. Additional stakeholders representing the market have also been established and include the Malta Employers Association and the General Retailers and Traders Union, representing the small and medium-sized enterprises (SMEs). All these stakeholders have developed the capacity, albeit limited, to offer feedback and policy proposals and all are represented on the Malta Council for Economic and Social Development, the formal consultative council. In terms of corporate governance, the larger firms have well-established corporate governance practices, especially those with foreign interests. However, there is always room for improvement, especially as SMEs continue to grow and develop. The environment in which market agents operate is considerably enabling towards investment and growth. Various initiatives have been launched, including investment schemes and investment guarantees, and other EU-funded schemes have contributed. Measures to reduce bureaucracy and the launch of a one-stop shop for government services have also alleviated several problems. As government continues to reduce bureaucracy and streamline work practices, the enabling environment is set to continue improving.

Civil society
(Score 7.0)

Over the years, especially following Malta's accession to the European Union, civil society has grown in both scope and relevance and today is considered a key lobbyist and stakeholder, especially in the areas of the environment and migration. In terms of capacity to propose policies and give feedback on policy proposals, civil society organisations are usually very well developed. With access to experts on the subject, who are usually heavily involved in the associations, as well as numerous other volunteers with a genuine interest in the subject and cause, civil society is well placed and developed as a stakeholder. Malta has a Commissioner for Voluntary Organisations through whom voluntary organisations register themselves and comply with various procedures to enhance transparency. The lack of enforcement powers of the Commissioner reduces the efficacy of this office although many organisations have in fact registered, since some funding schemes require such registration. This is also tied in with funding resources made

available to such organisations. Civil society has access to various funding channels, which include both national funds and European funds. Several organisations have tapped into European funding programmes and projects, which have also made a difference to society at large. Some civil organisations are also deeply involved in service delivery together with government. Examples of this exist in health, education and culture with local organisations contributing significantly in service delivery.

Informal
institutions
(Score 6.3)

Scoring an average of 6.3, Malta's informal institutions are well developed and make an important contribution to the policy-making and governance process. A good relationship exists between formal and informal institutions and there is a healthy spirit of co-operation in matters of concern and interest. A spirit of inclusiveness exists, as such institutions are also included in the consultative forums that are created, thus contributing to the communication that exists between all institutions and actors.

Learning ability
(Score 5.0)

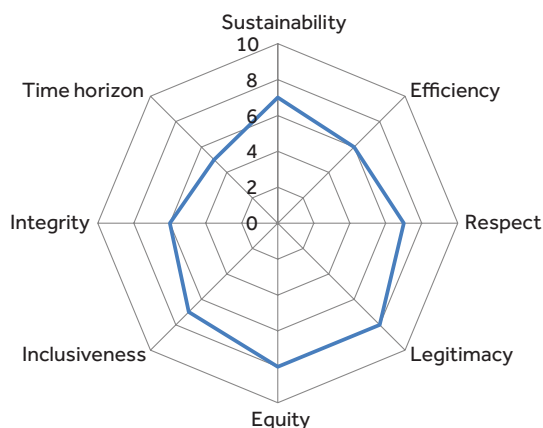
Malta's institutional set-up scores low on its learning ability. It scores particularly low in terms of existing feedback loops in the institutions for review and change. Unfortunately, the mind-set is still focused on meeting deadlines and targets rather than learning to improve work processes and methods. Although entry into the EU has helped, the public service still lacks leadership at most levels to drive this forward. This notwithstanding, changes and reforms have taken place; however, the bureaucracy involved might reduce the flexibility and agility needed to adjust work processes.

Decentralisation
(Score 6.8)

In terms of decentralisation, Malta has invested particularly in local government and today Malta has a well-functioning system which has been reviewed to better address today's challenges. With a decentralised governance structure in place, however, there is still a considerable amount of centralisation. Funding for decentralised structures has improved over the years, especially through European funding and programmes. Not all sub central tiers have the resources needed to carry out their responsibilities and it is mainly a matter of human resource capacity. More capacity-building programmes are needed to assist these tiers of government to improve their contribution. Although there is considerable co-operation between different partners, there is still room for improvement in co-ordination and in reaping synergies between different partners.

Third-order governance

Among the three orders of governance, Malta registered its best performance in third-order governance, with an average score of 6.8. This composite indicator is composed of eight guiding values that were deemed to be the most relevant for policy-making in small states. Figure 3.23 gives an overview of Malta's performance in third-order governance.

Figure 3.23 Overview of third-order governance in Malta

Source: Fabri.

Sustainability (Score 7.0)

Following Malta's membership of the European Union, sustainability started to play an increasingly important role in Malta across the sectors. As Malta is a small island state, sustainability is central to its long-term success. Although sustainability started becoming an important policy concern only recently, it has managed to be a concern across a number of sectors. In the economic sphere, the sustainability of public finances has been given a lot of importance as a policy concern and so has the sustainability of pensions. The policy for the environment and waste management was also built around the central tenet of sustainability. Although it is being given due importance, sustainability still needs to be further entrenched into the policy-making process.

Efficiency and frugality (Score 6.0)

The search for efficiency and frugality in Maltese policy-making has never been given significant importance, especially in the policy-making process itself. A drive to cut bureaucracy and to streamline processes has started and this is meant to result in efficiencies across the public sector. Further effort is needed for efficiency to be translated into a guiding value.

Respect (Score 7.0)

Respect towards institutions has matured over time with an ingrained rule of law. Respect towards institutions was entrenched through the establishment of wide-ranging policies and procedures especially following EU membership. However, this respect is not guaranteed and civic education has to continue contributing to this respect.

Legitimacy (Score 8.0)

Reflecting the high degree of respect, governments try to achieve a sense of legitimacy for policy proposals and reforms.

Equity (Score 8.0)	Malta's society is characterised by a sense of equity, and policy-making is also guided by this value. The strong welfare state that has been built over the years and the political convergence towards the centre-left on social issues have led to equity being cemented as an important guiding principle.
Inclusiveness (Score 7.0)	Inclusivity is sought by policy-makers and is usually a guiding value in policy-making. However, a challenge remains in Malta for inclusivity to bridge the political divide and also with third-country nationals, especially irregular migrants.
Integrity (Score 6.0)	Although integrity is still considered an important benchmark and several codes of ethics and codes of conduct have been enacted, there is still a need for effort to be made towards ensuring that the value of integrity is truly respected. The various cases of policy-makers and judges that either breached the codes of ethics or were involved in corruption scandals further highlight the challenge that exists.
Time horizon (Score 5.0)	Unfortunately, the political cycle can leave undesired effects on policy-making. Because of the five-year cycle, some difficult decisions are not taken, reducing the time horizon of policy-making to an unnaturally short period. Political parties need to mature further and to think beyond election deadlines and contribute more towards a longer time horizon in policy matters.

3.8.4 Conclusions

Although this is only an initial country assessment, the framework and codebook have been shown to be comprehensive and holistic in their assessment of governance. From this single country case study it is apparent that a diagnostic approach is needed to compile the report from the codebook. Various experts from different backgrounds need to be interviewed in order to get a fair and complete assessment of governance in a particular country from the direct participants in the governance process. In addition, it is crucial to have a country reference manual with various sources which can be used and stated as case studies. Country case studies will add value to the analysis and a thorough research exercise is warranted across a number of sources, not least the independent media.

3.9 Conclusion

Policy-making is becoming more complex and the need for resilience building is becoming more urgent, while traditional governing models are evidencing strains.

The governance model based on political decision-making in governments and bureaucratic implementation seems able to offer neither an all-inclusive way of governing society and the economy nor an understanding or prescription of policies and reforms so that governing might be facilitated in today's complex societies. Heavy reliance on formal political institutions as the only route towards good governance

places developing countries at a disadvantage since the Western institutional model is not fully developed in these countries.

This growing frustration with the traditional model of governance prompts us to focus more on governing processes rather than on governing institutions. This is born out of the fact that governance is inherently about interactions between different actors. Therefore by focusing less on the formal institutional arena, policy-makers can benefit from envisioning the factors that influence the processes through which different actors from different levels and sectors come together to solve problems and create new opportunities.

The idea behind this chapter has been to advance the interactive governance paradigm onto a conceptual national governance model in order to further develop the knowledge of governance. This model was further transposed into a governability assessment framework which allows a holistic view of a country's governance framework and processes. The snapshot generated through this assessment framework will also chart possible reforms that are needed for a country to improve its processes and ultimately its resilience through better governance.

Although the assessment framework was developed, a proper implementation of it in a number of countries still needs to be undertaken in order to test its completeness and robustness. In this regard, it is envisaged that a virtual questionnaire be developed for country experts and policy actors to be able to complete the questionnaire online. This virtual platform will allow an automatic aggregation of the results, as well as a visual analysis.

It is recommended that further research and development be undertaken on both the conceptual model and the research questions that operationalise the framework. Various challenges exist in advancing the model, especially on a methodological level, which can be addressed only after testing it beyond single-country case studies. In addition, the codebook needs to be complemented by a country book on sources and literature that can be used in the compilation of the report.

This chapter has sought to contribute to the literature on governance and resilience by proposing a holistic governability assessment framework which can be further developed through additional research.

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Chapter 4

Strengthening Environmental Management in the Context of Resilience Building in Commonwealth Small States

Prakash NK Deenapanray and Derrick Oderson

4.1 Introduction

Building resilience is an important element of small states' efforts to withstand inherent and policy-induced vulnerabilities and fully embrace and benefit from globalisation. Research suggests that the key requirements for resilience are macro-economic stability, market efficiency, good governance, good environmental governance, and equitable and inclusive social development.

This chapter explores how to strengthen environmental management in the context of resilience building in small states. The natural environment can often be an important source of vulnerability to natural hazards, such as earthquakes, floods and volcanoes, and anthropogenic hazards, such as the adverse impacts of climate change, including, inter alia, rising sea-levels, health hazards and increased frequency of extreme events which could deliver adverse shocks to an economy. In addition, the globalisation process leading to the commercialisation of environmental resources is an added complication for environmental management. Pressure on the environment arises mostly from excessive global focus on competitiveness for economic gain, which often leads to disregarding the value of and the hazards resulting from any damage to ecosystems, including irreversible damage. The hazards give rise to socio-economic and environmental risks that need to be properly managed. Management of such risks and the effective integration of sustainability principles into the development process, as well as globalisation, are conducive to resilience building. Hence, it is important to effectively manage environmental and natural resources to mitigate damage from environmental shocks and natural disasters.

The overall objective is to focus on environmental management in building resilience in small states, including small island developing states (SIDS). This chapter therefore examines effective environmental management in relation to building the resilience of small states, with a view to developing a framework that would allow for profiling countries, identifying gaps and proposing appropriate policy responses to any identified gaps. The ultimate goal would be enhancing states' capacity to sustainably absorb disturbances, which negatively affect the quality of life of their citizens.

More specifically, this chapter examines the key building blocks for effective management of environmental resources and services, outlining key elements of best practice in support of resilience building; briefly assesses the quality of environmental

governance in Commonwealth small states; proposes elements of a composite index to capture the quality and effectiveness of environmental management; and identifies priority areas for policy intervention, including a discussion of best-fit practices.

The challenge of strengthening environmental management in the context of resilience building in small states is complex, given the multifaceted nature of the issues involved in the effective management of environmental resources and services, and so a number of methodological approaches have been considered. These include the Environment Vulnerability Index developed by South Pacific Applied Geosciences Commission (SOPAC 2004); the classification framework proposed for the analysis of trade in environmental services in the CARICOM Single Market and Economy (CSME) zone (Griffith 2009); the framework for managing environmental vulnerability in SIDS by Ursula Kaly et al. (2010); and the approach adopted by the ISLANDS project, which is predicated on three building blocks, namely the application of the ecosystem approach, multi-stakeholder processes, and the learning-by-doing approach (Deenapanray and Bassi 2014).

The resulting framework from the analysis is an extension of the classification scheme/framework proposed for the analysis of trade in environmental services in the CARICOM Single Market and Economy zone. The framework was extended to include a more comprehensive treatment of governance, developed from various models of governance.

In the review of the quality of environmental governance in Commonwealth small states (CSS), a number of approaches were employed which identified the components of the environmental governance systems which exist in CSS. This is referred to as the 'Environmental Governance Milieu'. Assessment criteria for evaluating the distinguishing characteristics of environmental governance in CSS were developed to guide the analysis. This exercise included the determination of international environmental legal instruments to which CSS are party and reviewing the national environmental governance framework in each of the CSS.

To facilitate this analysis, information has been compiled from a number of sources including, inter alia, national reports which the CSS have prepared for the various UN processes such as the Third International Conference on SIDS; national reports on their fulfilment of the various multilateral environment agreements (MEAs) to which they are party; and ongoing non-UN processes (as in the Caribbean CSS states that are members of the Caribbean community, where work is being undertaken in support of the development of the Caribbean community environmental protection and natural resources policy framework).

The components of an index to capture the quality and effectiveness of environmental management were developed based on the key building blocks for effective management of environmental resources and services. This would need to be further refined through a process of empirical investigation. In the interim, the classification used for the identification of the key building blocks for environmental management is used as the basis for developing a list of areas of environmental vulnerability (e.g. water quality, beach erosion, solid and liquid waste management, air pollution,

deforestation, soil erosion) and a weighting given to each. The weights would, however, depend on ecological impact, and from this some measurement or estimate of economic impact. Another approach to define weights would be to employ expert knowledge based on an inclusive multi-stakeholder process (Cooke and Kothari 2001). This is especially useful in circumstances where ecological impacts may not be readily quantified.

In terms of the identification of priority areas for policy intervention, a number of policies emerge from the framework as critical for building resilience, but the process of selecting policy priorities must be guided by country level assessments of peculiar vulnerabilities and weaknesses. While this is a planned next step of the process, preliminary findings can be garnered from the existing body of work on environmental management in small states. This is done and the results are summarised in the final section of the chapter.

4.2 Key building blocks for effective environmental management

4.2.1 Terminology

It is useful to begin with a brief overview of the terms used in this chapter.

First, it is necessary to understand what is meant by ‘environmental resources and services’. Environmental resources comprise the bio-physical environment, both living (biotic) and non-living (abiotic). These resources provide important benefits, which are characterised as environmental or ecosystem services.

Since human beings are key ‘actors’ in altering environmental resources, managing the interactions and impacts of human actions on these resources and the implications thereof is a key aspect of effective management. The choices made with respect to the use of environmental resources are therefore critical in helping to determine the ability of these resources to respond to stresses which might impact upon them.

The ability of environmental resources to respond to stress is characterised as their resilience. Resilience is used in this chapter as:

- the ability of a system (which may be internal or external and could be economic, social or environmental) to *respond to stress(es) by withstanding or maintaining* itself in the face of the stress(es);
- *absorbing the stress(es) and still existing*, thus demonstrating the ability to recover quickly from the stress(es).

It may therefore be argued that ‘resilience building’ is influenced by the choices and/or decisions made in the management of that system, as well as creating an enabling environment for these decisions to be implemented effectively and efficiently for resilience building to take place. The factors influencing choices can be classified into five groups:

- technical, including the methods and approaches to utilisation of the resources in question;

- policy, including measures through a wide range of policy instruments;
- legal and institutional frameworks, including the development, application and administration of appropriate laws and appropriate institutional mechanisms;
- behavioural dimension, includes the historical influence, culture; traditions including traditional knowledge and technology use and application, and
- cross-border action, including measures in a subregional/regional context as a combined response by a number of countries.

The decisions on policy involve a cycle that is made up of five iterative steps: (1) agenda setting; (2) policy formulation; (3) decision-making; (4) policy implementation; and (5) policy evaluation. As discussed by Deenapanray and Bassi (2014), context-specific indicators can be selected to carry out the monitoring and evaluation of integrated policies.

The legal frameworks encompass laws at the national, regional and international levels. In the case of international law this includes interventions designed at the international level, often referred to as MEAs. These are key components of environmental governance.

Environmental governance is multifaceted – it occurs at various levels, involves many processes and is encapsulated across elements of the building blocks mentioned.

4.2.2 Identifying the key building blocks

A number of classification schemes specifically designed for SIDS were reviewed, including the Environment Vulnerability Index developed by SOPAC (2004), the classification framework proposed for the analysis of trade in environmental services in the CSME zone (Griffith 2009) and the vulnerabilities affecting the main environmental categories in SIDS, identified in the Mauritius Strategy for the further implementation of the Barbados Programme of Action (MS/BPOA) (Kaly et al. 2010).

The SOPAC Environmental Vulnerability Index (EnVI), developed in 1999 through a consultative and collaboration process, including countries, institutions and experts across the globe, uses 50 smart indicators for estimating the vulnerability of the environment of a country to future shocks (SOPAC 2004). One ambiguity with the SOPAC EnVI is that it confounds ‘vulnerability’ and ‘resilience’, which are related but not commensurate concepts. ‘Resilience’ as defined in this report is induced by policies and supported by an enabling environment. The classification scheme for environmental services in the CSME zone, on the other hand, builds upon various classifications, in particular the W/120 CPC, the OECD/EuroStat, and EC classifications used for the identification of trade in environmental services, but adapted to the Caribbean situation (Griffith 2009).

It was concluded that the framework proposed for the analysis of trade in environmental services in the CSME zone provides a good basis for the identification of the key building blocks. These key blocks would help ensure effective management of environmental resources and services.

In addition to being used as a framework for classifying trade in services in the CSME zone, it has also been employed for addressing the diagnostic and analytical review of environmental governance systems for a number of member states of the Caribbean community, including Antigua and Barbuda, Barbados, Haiti, St Vincent and the Grenadines, Montserrat and Suriname.

This framework has a number of benefits, including provision of a structure for analysing the various elements of the environmental governance systems. The framework could be used throughout the CSS, as a basis for the rationalisation of the numerous initiatives being undertaken by member states in the field of environment at the national, regional and international levels and in multiple forums. In this regard, it easily accommodates the vulnerabilities affecting the main MS/BPOA environmental categories in SIDS as highlighted by Kaly et al. (2010). It is also sufficiently broad in scope to accommodate issues emerging in a post-2015 development agenda/sustainable development goals (SDGs).

4.2.3 The building blocks

The framework provided by the classification of environmental services in the CSME comprises four main clusters: Pollution Management Group; Information Knowledge/Capacity Enhancement Services; Cleaner Technology and Production Groups; and Resource Management Group (Griffith 2009). These four groups provide the basis for the building blocks of effective management of environmental resources and services.

The basis of human development is the use of natural and environmental resources. A fundamental building block for effective management of environmental resources and services relates to the manner in which these environmental resources are used for human development. Emphasis is therefore placed on resources such as land and forest, and their utilisation; water, and its treatment and distribution; biodiversity, and how it is used, sustainably or otherwise; coastal and marine resources, and their management; and the use of those resources for the production of renewable energy. It also includes the protection and management of natural and cultural heritage, and the tools and instruments (e.g. environmental impact assessments) used to facilitate environmental management and planning.

To facilitate the utilisation of materials extracted from environmental resources, various technologies and production processes are employed to convert them into products for human consumption. The types of technologies used, and the production process employed, form another building block for effective management of environmental resources and services. In this context emphasis is placed on the use of cleaner and resource-efficient technologies and processes, and the production of resource-efficient products.

In the transformation process of the utilisation of environmental resources and services for human development, depending on the way in which this is carried out, positive and negative elements are likely to result. One such by-product, resulting from the use of environmental resources, is pollution. This is manifested in different

ways, including solid and hazardous waste management, the processes involved in recycling materials, wastewater management, air and noise pollution, and remediation and clean-up of soils, surface or groundwater. Hence another important building block for the effective management of environmental resources and services is pollution management. A key strategy which should underpin this building block is the promotion of environmental cost internalisation, being cognisant of the approach that the polluter should, in principle, bear the cost of pollution. Pollution management encompasses a number of specific issues which CSS face in varying degrees.

Another fundamental building block for the effective management of environmental resources is access to quality data and information, and their availability in a timely manner on which to base policy decisions. This is, to a large extent, dependent on the availability of facilities for analytical services, data collection, analysis and assessments, as well as environmental research and development. However, issues relating to access to quality data and information, including the lack of full scientific certainty, should not be used as a reason for postponing cost-effective measures to prevent environmental degradation, i.e. where there are threats of serious or irreversible damage to the environment, as encapsulated in the precautionary principle.

In addition, as observed in Principle 10 of the *Rio Declaration on Environment and Development*, the effective management of environmental resources and services is best handled with the participation of all concerned stakeholders. Fundamental to this, is for stakeholders to have appropriate access to information concerning those resources held by public authorities, as well as the opportunity to participate in decision-making processes and, when breaches occur, to have effective access to judicial and administrative proceedings, including redress and remedy. Closely related is the obligation of the state to facilitate and encourage public awareness and participation by making information widely available.

Another key building block for the effective management of environmental resources and services is the environmental governance system, which has been put in place at various levels – national, regional and international – to manage environmental resources and services. There is growing consensus that governance – in this case, environmental governance – impacts environmental action and outcomes. Used in this report, the *environmental governance system embodies the legal and institutional frameworks which have been put in place to manage the decision-making processes relating to the use, control and management of environmental resources and services*. This therefore encompasses the processes, rules, practices, norms and institutions related to the management of the environment at various levels, including, inter alia, at the local, community, national, regional and international levels.

4.2.4 Relationship between the building blocks and resilience building technologies

Good environmental management is, in its own right, and in effect, a good resilience-building strategy. Implicit in good environmental management are many of the approaches, concepts and technologies which are considered necessary for resilience building. In this chapter, ‘technology’ is used in a very broad way to encompass a piece

of equipment, technique, practical knowledge, or skills for performing a particular activity or implanting a particular measure or intervention. In this application, it is common to distinguish between three different elements of technology: the tangible aspects, such as equipment and products (hardware); the know-how, experiences and practices (software) associated with the production and use of the hardware; and the institutional framework, or organisation, involved in the transfer and diffusion of a new piece of equipment or product (orgware) (Boldt et al. 2012).

Table 4.2 provides an indicative overview of some of the approaches, practices and technologies that can be employed to facilitate resilience building in CSS. These are in fact the same tools and approaches that are required for good environmental management. To illustrate the close relationship between the tools employed to facilitate good environmental management and those required for resilience building let us examine briefly the management of coastal and marine resources. Based on Table 4.2, it is suggested that a comprehensive and integrated ecosystem-based management approach be adapted to the management of environmental resources.

In application, this will require recognition of the inter-linkages within and across ecosystems; understanding and addressing cumulative impacts; managing multiple objectives; and embracing change, learning and adapting. It will also require the consideration of appropriate setbacks; depending on the state of the resources, beach restoration, nourishment and stabilisation; beach re-vegetation; reef protection, including the establishment of marine protected areas; monitoring of coastal erosion; breakwaters; and coral reef protection and rehabilitation, including, as may be necessary, the creation of artificial reefs. These are the same technologies that would be used for resilience building.

4.2.5 Conclusion

The process of managing environmental resources and services is complex and multifaceted given the nature of these resources. The building blocks for their effective management are equally complex and cover a broad range of environmental issues. This section has characterised the building blocks for the effective management of environmental resources and services into five broad groups, namely pollution management, information/knowledge capacity enhancement, cleaner technology, resource management, and the environmental management system, which is put in place to manage the use of environmental resources and services. In addition, using the building blocks as a basis, the approaches and concepts that underpin the effective management of environmental resources and services can easily be identified, as well as the technologies that could be employed to build resilience.

4.3 The quality of environmental governance

4.3.1 Introduction

This section provides an overview of the quality of environmental governance in CSS. There is growing consensus that governance is an important dimension

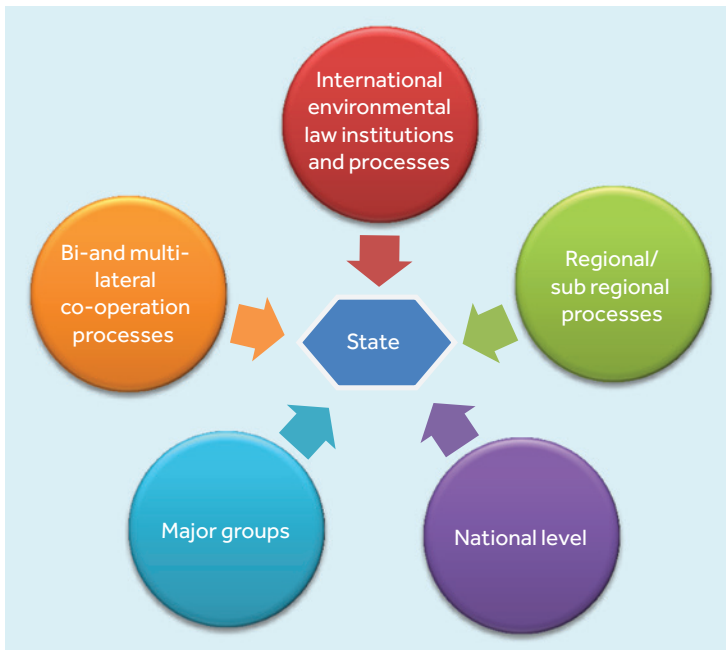
of effective management of environmental resources and services. The process of governance as it relates to the management of environmental resources and services involves many actors and processes operating at different levels (i.e. international, regional and subregional, national). Potentially in any one country there is a wide range of governance mechanisms in operation. Governance is also underpinned by a number of interconnecting principles, including transparency, participation, accountability and integrity, which forms part of the 'accountability chain'.

4.3.2 The Environmental Governance Milieu

Before attempting an assessment of the quality of environmental governance in CSS, it is necessary to identify the environmental governance system to which the chapter refers, as well as its components. This is referred to in this report as the 'Environmental Governance Milieu' and is shown schematically in Figure 4.1.

The Environmental Governance Milieu is characterised by the need for co-operation and co-ordination between its constituent parts and participation of all the actors involved. It is suggested that central to the Environmental Governance Milieu is the role of the state (comprising its constituent parts: electoral process, legislature, executive, judiciary, civil service etc.) as an institution, in its own right. The state as an institution in CSS plays a key role in establishing governance mechanisms for the management of environmental resources and services.

Figure 4.1 The Environmental Governance Milieu



It is further suggested that the constituent parts of the Environmental Governance Milieu comprise international environmental law, institutions and processes; regional and subregional processes; bi- and multilateral processes; national processes; and major groups (see below):

International environmental law, institutions and processes. These are key elements, which can be characterised as an institution in its own right. These processes are usually undertaken within the context of the United Nations system and are reflected in ‘hard law’, commonly referred to as MEAs, and ‘soft law’ in the form of resolutions, action plans and programmes (e.g. the Barbados Programme of Action [BPOA]) which member states adopt and are guided by. These instruments are usually orientated toward addressing global environmental concerns and are used within a multilateral context. The various organs of the state usually play important roles with respect to the operationalisation of these processes.

Included under this theme are the international financial governance mechanisms which have been established to finance global environmental action (i.e. Global Environment Facility [GEF] or the Adaptation Fund [AF] or the forthcoming Green Climate Fund [GCF]). The SIDS international negotiating mechanism for environment and sustainable development – the Alliance of Small Island States (AOSIS) – is also included, as well as the institutional entities (i.e. High Level Political Forum [HLPF], United Nations Environment Assembly of UNEP [UNEA]) with which it interacts.

Regional and subregional processes. As a means of addressing cross-border concerns and to reduce some of the inherent vulnerabilities faced by countries, member states in some circumstances commit to undertake common actions. This can take different forms, including the establishment of integration mechanisms with a defined legal framework (e.g. Caribbean Community Single Market and Economy [CSME]), regional legally binding agreements (e.g. *Convention for the Protection of the Natural Resources and Environment of the South Pacific Region and its Related Protocols, adopted at Noumea in 1986* [the ‘SPREP’ Convention]), regional programmes (e.g. Indian Ocean Commission [IOC]) and the management of transboundary resources.

Bi- and multilateral processes. States usually co-operate bilaterally, trilaterally and multilaterally in the framework of development co-operation. These processes are exemplified in a variety of ways, including trade agreements (e.g. economic partnership agreements) and technical assistance schemes.

National processes. These include the body of laws at the national level, which have evolved for providing the framework within which decisions are made with respect to the management of environmental resources and services.

Major groups. It is generally accepted that one of the fundamental prerequisites for the management of environmental resources and services is the effective participation of both state and non-state actors in operational activities. Referred to as (non-state) major groups in this chapter, this group comprises a broad range of stakeholders, including industry and business, non-governmental organisations, indigenous

peoples and their communities, scientific and technological community, workers and workers' organisations, and women and children.

It is evident from the foregoing overview of the Environmental Governance Milieu that the interaction between its constituent parts is fundamental to effective environmental governance.

4.3.3 Assessment criteria

Using the framework provided by the interactive governance model, a determination was sought of what can be considered as the quality of environmental governance in CSS. The quality in this context is interpreted as the distinguishing characteristics of environmental governance mechanisms in CSS. In order to assess these distinguishing characteristics, however, a set of criteria were established (see Box 4.1).

Box 4.1 Criteria for assessing distinguishing characteristics of environmental governance mechanisms in Commonwealth small states

International level

- Adherence to international environmental law through the ratification of international and regional environmental agreements.
- In CSS with common law jurisdictions the extent to which the obligations contained in MEAs have been incorporated into national law, thus making them available in law to the nationals of that member state.

Regional level

- Existence of regional legal framework(s) to which member states subscribe.
- Existence of a regional institutional framework which has its basis in law for co-ordinating environmental interventions at the regional level.

National level

- If there is a dedicated institutional mechanism for environmental management.
- The existence of comprehensive legal framework which clearly outlines the legal mandate of the dedicated institutional mechanism.
- The extent to which appropriate access to information concerning the environment that is held by public authorities is provided by law.
- The extent to which the law provides adequate opportunity to participate in decision-making processes relating to environmental matters.
- The extent to which the law provides for effective access to judicial and administrative proceedings, including redress and remedy, with respect to environmental issues.

International level

CSS are party to a plethora of MEAs, which forms part of their environmental governance structure. These MEAs are usually negotiated in a multilateral context and partly in response to concerns about global environmental issues. Table 4.1 provides an overview of the MEAs to which CSS are party. These are presented in clusters after Griffith and Oderson (2009), which cover, inter alia, wildlife and biodiversity conservation; the protection of traditional knowledge; marine and coastal resources, their management and protection and marine safety; the protection of atmospheric systems (i.e. against ozone depletion and climate change); sustainable land management; waste and chemical management; and the protection of human health, environment, culture and natural heritage. The level of ratification of MEAs varies from country to country.

A key issue to be considered in assessing the quality of environmental governance in CSS, with respect to MEAs, is the relationship between national law and international law as represented by the MEAs. Since most of the CSS have common law jurisdictions, MEAs form no part of domestic law unless enacted by the legislature. This principle is amply addressed in two Caribbean environmental cases, namely *Natural Resources Conservation Authority v Seafood and Ting International Limited and DYC Fishing Limited*¹ and *Talisman (Trinidad) Petroleum Ltd v The Environmental Management Authority*.² (For a more detailed discussion on the relationship between national law and MEAs, see Griffith and Oderson (2009). A critical question in determining the quality of environmental governance in CSS is the extent to which the obligations contained in MEAs are made available, through domestic legislative means, first to enable domestic courts to have the jurisdiction to construe or apply them and, second, for them to have effect upon the rights and duties of citizens in common or statute law, within those countries.

Regional/subregional levels

Equally important in influencing the internal environmental governance dimension of CSS are the regional and subregional processes. These processes usually take a variety of forms, including regional integration with defined legal framework(s), regional binding agreements (regional multilateral environment agreements) and technical assistance programmes, the nature of which varies from CSS region to region. In the case of the Caribbean CSS, the main framework for regional level environmental governance is provided by the *Revised Treaty of Chaguaramas establishing the Caribbean Community including the Caribbean Community Single Market and Economy* (CSME). (Note that The Bahamas is not a part of the CARICOM Single Market and Economy.) Pursuant to Article 211, the Caribbean Court of Justice has compulsory and exclusive jurisdiction to hear and to determine disputes concerning the interpretation and application of the revised treaty, and therefore must be considered as part of the environmental structure of governance of the member states that are part of the CSME. At the time of writing, the community is preparing its environmental protection and national resource policy framework, which will form an integral part of the CSME.

At the subregional level of the Organization of Eastern Caribbean States (OECS), the Revised Treaty of Basseterre also provides for environmental management in the OECS. The St George's Declaration of Principles for Environmental Sustainability is also codified as part of the body of OECS environmental law. In addition, given the geographical location of both Belize and Guyana, their environmental governance structure extends beyond the Caribbean region. Guyana is party to the Amazon Cooperation Treaty. Belize, on the other hand, is party to the Constitutive Agreement of the Central American Commission for Environment and Development (CCAD).

The countries of the Pacific operate co-operatively within the context of Pacific Islands Forum, a political grouping of 16 independent and self-governing states. Within this framework, a number of regional environmental agreements have been concluded, including:

- Convention on Conservation of Nature in the South Pacific (Apia Convention, 1976);
- South Pacific Nuclear Free Zone Treaty (SPNEZ) 1985, which bans all forms of nuclear testing in the Pacific;
- Convention for the Protection of the Natural Resources and Environment of the South Pacific Region and its Related Protocols, adopted at Noumea in 1986 (the 'SPREP' Convention), which came into force on 22 August 1990; and
- Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Waste and to Control the Transboundary Movement and Management of Hazardous wastes within the South Pacific Region (the Waigani Convention) 1995.

The East African CSS, namely Mauritius and Seychelles, are party to the Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean (Nairobi Convention) and its protocol: the Protocol for the Protection of the Marine and Coastal Environment of the Western Indian Ocean from Land-Based Sources and Activities (LBSA Protocol). The Convention was amended in 2010 but at the time of writing is yet to enter into force.

In the case of the CSS that are members of the European Union, Cyprus and Malta, their internal environmental governance arrangements are significantly influenced by European Community Environmental Law, as the principle of the supremacy of Community law prevails.

National level

The environmental governance structure for the CSS varies from region to region. Based on the information collated in Table 4.4, a number of observations can be made. Generally, it may be concluded that in the case of CSS in the Caribbean, with the exception of Trinidad and Tobago, Guyana and Belize, comprehensive environmental legislation is not the norm. Legislation is still primarily issue specific. In addition, many of the entities which deal specifically with defining and developing

environmental policy at the national level do not have any legal standing in law. There is, however, a trend towards comprehensive environmental legislation, as most of the member states of CARICOM which have do not currently have comprehensive environmental legislation do have drafts, most of which have been drafted between five and fifteen years without being enacted. This contrasts with the situation in most of the other CSS which have enacted comprehensive environmental legislation. In the CSS in the other regions the trend seems to be the enactment of comprehensive environmental legislation.

4.3.4 Conclusion

Governance is an important dimension of good environmental management. As highlighted in Section 4.2, environmental governance is identified as one of the building blocks for the effective management of environmental resources and services. Environmental governance is multifaceted, occurs at various levels and involves many processes, as illustrated by what is referred to as the Environmental Governance Milieu. A set of criteria for assessing the distinguishing characteristics of environmental mechanisms has been formulated and applied to the various levels under consideration.

To aid in the assessment of the quality of environmental governance in CSS, an analysis was undertaken of the environmental governance structure for each CSS. A number of conclusions can be drawn from the analysis, in particular that the pace towards comprehensive environmental legislation in the Caribbean CSS seems to be slower than in the other CSS regions. Additionally in the Caribbean CSS, efforts are under way to give meaning to the notion of a single environmental space as envisioned by the CSME. In this regard, lessons could be drawn from the experiences of the European CSS which are members of the European Union, as their national laws are significantly influenced by European Community Environmental Law.

4.4 Towards a composite index for quality and effectiveness of environmental management

4.4.1 Introduction

Since the convening of the United Nations Conference on Environment and Development (UNCED) in 1992, environmental and sustainability indexes have received increasing attention. The study identifies the elements of a composite index (referred to as the Environmental Management Quality and Effectiveness Composite Index), which captures the quality and effectiveness of proposed environmental management.

4.4.2 Elements of the Environmental Management Quality and Effectiveness Composite Index

Using the framework for identifying the building blocks for effective management of environmental resources and services as a basis, and taking into consideration

the components of Environmental Governance Milieu as outlined in Figure 4.1, a number of elements are proposed to form part of the Environmental Management Quality and Effectiveness Composite Index.

A first step in proposing elements of a composite index to capture the quality and effectiveness of environmental management is the determination of what is being measured. This requires that the 'quality' and 'effectiveness' of environmental management be defined.

For the purpose of this report, the 'quality' of environmental management is interpreted to refer to the characteristics of the environmental management system in operation. In this regard, five characteristics are identified which could be used for determining the quality of environmental management:

- Is there a competent institutional mechanism which has overall responsibility for shaping overall national environmental policy?
- Is the mandate of the competent institutional mechanism clearly defined by law?
- Is appropriate access to information concerning the environment that is held by public authorities provided by law?
- Does the law provide for adequate opportunity to participate in decision-making processes relating to environmental matters?
- Does the law provide for effective access to judicial and administrative proceedings, including grievance, redress and remedy, with respect to environmental issues?

The 'effectiveness' of environmental management, on the other hand, is interpreted as meaning the effect of policy decisions made on/about the environment.

It is proposed that the Environmental Management Quality and Effectiveness Composite Index focus on four broad themes: environmental health, ecosystem management, private sector performance and environmental governance. For each of these four broad themes, a list of environment-related issues is identified as outlined in Table 4.5. For each of the environmental issues identified, a set of indicators is identified. It is important to note, however, that the elements of the Composite Index which are proposed must be tested and validated in CSS. This will require the development of an index for all CSS, with concentration on a national index in the first instance. Once these indicators are tested for their applicability to the situation in CSS, they will be weighted. The individual country's index could be brought together to formulate a CSS index, to build up a global picture.

4.4.3 Data availability: a possible constraint impacting on the development of the Composite Index

One of the main constraints which are likely to be faced in developing the composite index is the availability of quality data. One of the constraints faced

by CSS is the systematic collection, processing and analysis of environmental data. This has been identified by many CSS as a major constraint affecting the management of their environmental resources and service. To overcome this constraint, a partnership initiative is recommended among small states on the systematic collection of environmental data and its integration into the national statistical infrastructure of CSS. The latter mechanism should also be used for decision-making purposes.

4.4.4 Conclusion

A preliminary list is identified of elements, which should form the core of the Environmental Management Quality and Enhancement Composite Index. These provide a good basis on which to build the composite index; however, the process for doing this will need to take place in a systematic manner, building on constituent parts, as outlined in Figure 4.1. Once the indicators are tested and a final set of indicators agreed upon, they will be weighted and applied as the basis for developing the composite index.

4.5 Priority areas for policy intervention: a summary overview

4.5.1 Introduction

This section provides some preliminary insights from a review of the existing literature on the likely key priority areas for policy identification. The priority for policy intervention, however, covers a wide cross-section of areas and draws on some of the priorities as identified by small states themselves. Many of the priority areas have been prescribed for SIDS in the context of international discussions but have applicability to all small states, while some policies are SIDS specific, related to the management of their oceans and coastal areas.

4.5.2 Priority areas for policy intervention

The summary overview of the priority areas for policy intervention is presented in clusters consistent with the analytical framework used for identifying the building blocks framework.

Pollution management group. Under this subtheme, the issue which stands out most is waste management, particularly hazardous and ship-generated waste. In the case of the Caribbean, notwithstanding the coming into force of the special area status³ of the Wider Caribbean region, including the Gulf of Mexico and the Caribbean Sea, on 1 May 2011, under MARPOL 73/78, many of the Caribbean CSS are yet to have in place adequate port reception facilities.

Information/knowledge capacity enhancement group. A number of key priority areas are identified under this grouping, which encompasses a range of activities, including analytical services, data collection, analysis and assessment, environmental research

and development, and environment education and training. These are summarised as follows:

- The systematic collection and analysis of environmental information and data; its integration in the national statistical infrastructure and its use for decision-making.
- Trade and environment, with a focus on both assessments on those interrelations (i.e. the impact of non-tariff/market access measures), and capacity enhancement for trade negotiations and their operations.
- Investments in formal and non-formal education, including the use, development and sharing of open learning/distance education and technologies in support of environment and sustainable development. The experience of the Commonwealth Secretariat in using open learning and distance education platforms has proven to be an important vehicle in the delivery of short-term intensive training for CSS middle management technical professionals. Benefits from using these technologies include the ability to overcome the geographical constraints inherent by location of CSS across the globe. More specifically, the use of such technologies also facilitates increased contact between CSS professionals, thereby providing a basis for the strengthening of inter- and intra- co-operation and collaboration between CSS.
- The operationalisation of the Technical Assistance Programme for Small States/SIDS, to serve as a vehicle through which resources could be made available to small states/SIDS to compensate for the limited access by small states/SIDS to concessionary resources, and facilitate the enhancement of these countries' human resources potential; a mechanism which allows for small states/SIDS' expertise and experience to be deployed throughout and across small states/SIDS regions as may be necessary, as well as facilitating the pooling of small states/SIDS expertise; and a means of sharing of resources and the utilisation of networks within the various small states/SIDS countries and regions.
- The establishment of a climate technology centre and network, to enhance technology co-operation and transfer.

Cleaner Technology and Production Group. This group focuses on cleaner and resource-efficient technologies, processes and products. Emphasis is placed on enhancing the involvement of the industry and business, and, in particular, small and medium-sized enterprises, in environmental and sustainable development issues. Two main vehicles for achieving this are highlighted: the SIDS-specific platform on sustainable consumption and production within the Ten-Year Framework Programme on SCP, and a private-sector-focused SIDS inter- and intra-regional private sector platform. In the operationalisation of platforms, great emphasis is placed on facilitating the conditions that foster entrepreneurship and innovation, and build the capacity of small and medium-sized enterprises while increasing their competitiveness to compete in third markets. These mechanisms, when established, should go a long way in engaging the private sector in CSS in environmental and sustainable development issues.

Under the *Resource Management Group*, a number of priorities are identified across the various resource areas. The expanded use of renewable energy technology is a clear priority, with emphasis on enhancing countries' ability to assess renewable energy technologies and the need for a funding mechanism to facilitate this process. Particular emphasis is placed on the sustainable use of marine biodiversity, including in areas beyond natural jurisdiction, for which a call is made for the negotiation of a specific international legal agreement. There is also an endorsement of the Barbados Declaration on achieving sustainable energy for all in SIDS. In the case of sustainable biodiversity, priority areas include the protection and sustainable utilisation of traditional knowledge and folklore, and access and benefit sharing as it relates to the components of biodiversity.

For SIDS, in the areas of coastal marine, ocean protection and management, a number of key priority areas are highlighted. At the macro-policy level, the concept of the development of the 'blue economy' is highlighted as a specific mechanism for SIDS and coastal countries to address their sustainable development challenges. There is a recognition that the blue economy must address and incorporate research, assessment, valuation and management of the blue capital; more effective international ocean governance; data collection, management and sharing; promotion of blue carbon on the carbon trading agenda; enabling mechanisms, including technology transfer, capacity building and targeted streamlined financing mechanisms; and modes of science-based implementation, including thorough action plans, such as maritime resilience action plans and marine spatial planning.

Priorities relating to fisheries management are also highlighted, including strengthening the infrastructure in support of small-scale fisheries, as well as capacities to participate in commercial fisheries, and the need for stronger instruments which could deter and eventually eliminate illegal, unreported and unregulated fishing. Related to the issue of fisheries management in general and increasing market access, the issue of improvements in infrastructure to assure compliance with international sanitary and phytosanitary measures is identified as a priority area for intervention.

Priority areas for intervention are also identified in other areas, including climate change, from an environment, development and security standpoint; natural hazard risk assessment and management; sustainable land management; and sustainable forest management.

A number of priority areas are also highlighted with respect to environmental governance as it relates to CSS. A critical priority area identified is the need for the *establishment of an institutional mechanism in the CSS/SIDS regions, to enhance inter- and intra-regional collaboration between CSS/SIDS*. This is considered to be one of the fundamental principles underpinning the rationale of the SIDS agenda, but one of the weakest implementation elements.

Without the establishment of such a mechanism in each of the three CSS/SIDS regions on which to saddle implementation of the BPOA, MS/BPOA and the outcomes of the

Third International Conference on SIDS, implementation of these instruments will continue to be less satisfactory than expected. A common thread underpinning the priority areas identified is the enhancement of collaboration and co-operation among these countries – a thread which underscores the need for an effective institutional mechanism within each of the regions to facilitate this. Generally, there is consensus that there is a need to shift from capacity to institution building as an important component of international support to small states/SIDS. Institution building encourages the use of country systems and promotes the retention of knowledge in all its forms, including traditional knowledge, within a country.

A number of priority areas are also highlighted with respect to international environmental governance issues, including:

- the full and equitable integration of CSS/SIDS in the new UN institutional architecture that is emerging following the Rio+20 outcomes, including the High Level Political Forum on Sustainable Development, ECOSOC, the United Nations Environment Programme, Sustainable Development Goals, the Technology Mechanism, the Sustainable Development report and the Sustainable Financing Mechanism;
- strengthening of institutional frameworks of entities comprising the UN system in order to increase effectiveness and efficiency, thereby fulfilling their functions and mandates in providing more coherent support to small states/SIDS, while ensuring appropriate accountability;
- enhancing the voice and participation of CSS/SIDS in norm setting and decision making at the global level, including the G20;
- the urgent need to review the mandates and operational functioning of UN agencies providing support to small states/SIDS; and
- the need for UN entities to build institutionalised support to small states/SIDS into their programmes and undertake activities that are responsive to the needs of small states/SIDS – *as articulated by the small states/SIDS themselves*.

In terms of international financial environmental governance, a number of priority issues are identified, including:

- establishment of innovative financing tools, in particular debt for adaptation swaps, an emerging tool for addressing debts in small states/SIDS and adaptation to climate change and also nature conservation;
- early operationalisation of the Green Climate Fund and urging developed countries to scale up financing to reach US\$100 billion by 2020;
- establishment of a dedicated mechanism to provide financing to developing countries, in keeping with the ongoing Rio+20 follow-up processes, in order to develop specific projects on sustainable development; and
- simpler, more flexible and favourable access to financial resources.

This last issue is related to the difficulty encountered by CSS in accessing resources under climate financing. To address the constraints being faced by CSS, in this regard, the Commonwealth Secretariat is considering the establishment of a climate finance skills hub and response mechanism. It is designed to enhance the capacity of SIDS and least-developed countries (LDCs) to access and manage public and private climate finance, and facilitate regional sharing of skills, knowledge and expertise from across the Commonwealth.⁴

4.5.3 Addressing the priorities: the application of the best fit model

Having identified the priority areas of intervention, a critical question is ‘what approach(es) will be employed in addressing them?’, taking into consideration the differences between the various countries, including the level of development and capacities – human, financial and technological. Very often in environmental management, reference is made to the identification of ‘best practices’. This form of programme evaluation involves reviewing policy alternatives that have been implemented to address similar issues in the past and which could be applied to a current problem. An alternative means of approaching environmental management issues is the use of the ‘best fit’ approach. Fundamental to this approach is to ensure that the strategies which are being pursued are suitable to the context (culture, local processes, technology etc.) in which they are implemented.

In addressing the priorities outlined in the foregoing paragraph, the one-size-fits-all approach might not necessarily be the most effective way to pursue many of the actions. In many instances, care will need to be taken to ensure that initiatives being implemented are tailored to the specific circumstance of the country in question. Moreover, it is important that the policy priorities are reflected in key international processes and the necessary resources made available by the international community for their implementation. The commitment by the international community to the establishment of an inter- and intra-regional institutional mechanism in each of the three SIDS regions will facilitate inter- and intra-regional collaboration and co-operation between this subgroup of CSS. These arrangements can be extended to include other small states.

Notes

- 1 Judgment in the Jamaica Court of Appeal, Supreme Court Suit CL 1999/D-058 and Suit No. CL 1999/S-134, Motions 16 and 17 of 1999, 1 July 1999.
- 2 *Talisman (Trinidad) Petroleum Ltd v the Environmental Management Authority*, Before The Environmental Commission In The Matter Of The Environmental Management Act 2000 And The Certificate Of Environmental Clearance Rules, 2001, Republic Of Trinidad And Tobago, No. EA3 of 2002.
- 3 Under the various Annexes of MARPOL – Annex I Prevention of pollution by oil; Annex II Control of pollution by noxious liquid substances; Annex IV Prevention of pollution by sewage from ships; and Annex V Prevention of pollution by garbage from ships – certain sea areas are defined as ‘special areas’ for which, for technical reasons relating to their oceanographical and ecological condition and to their sea traffic, the adoption of special mandatory methods for the prevention of sea pollution is required. Under the convention, these special areas are provided with a higher level of protection than other areas of the sea.

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Table 4.1 Classification of environmental services in the CSME zone

POLLUTION MANAGEMENT GROUP

Solid/hazardous waste management

Recycled materials

Wastewater management

Air pollution control

Noise and vibration abatement

Remediation and clean-up of soils, surface water or groundwater

INFORMATION KNOWLEDGE/CAPACITY ENHANCEMENT SERVICES GROUP

Analytical services, data collection, analysis and assessment

Environmental research and development

Environmental education, training and information

CLEANER TECHNOLOGY AND PRODUCTION GROUP

Cleaner/resource-efficient technologies and process

Cleaner/resource-efficient products

RESOURCE MANAGEMENT GROUP

Renewable energy

Water resources treatment and distribution

Sustainable biodiversity

Coastal and marine protection and management

Protection and management of natural and cultural heritage

Environmental planning

Natural hazard risk assessment and management

Sustainable land management

Sustainable forestry management

Other environmental services

Source: Griffith (2009)

Table 4.2 Indicative analytical framework for environmental management with technologies for building resilience

Approach/practice		Technology
RESOURCE MANAGEMENT GROUP		
Environmental and physical planning	Physical planning	• Establishment of setbacks • Limiting development in high-risk areas (e.g. flood plains) • Comprehensive and integrated planning • Environmental impact assessment (EIA)
Ecosystem-based management (EBM)	Integrated coastal zone management	• Beach restoration, nourishment and stabilisation • Beach re-vegetation • Reef protection including the establishment of marine protected areas • Monitoring of coastal erosion • Breakwaters
	Marine protected areas	• Dykes, levees and groynes • Reef protection • Reef rehabilitation
	Integrated water and watershed management	• Creation of artificial reefs • Watershed restoration and management • Afforestation and reforestation • Leakage detection systems • Rainwater harvesting • Water quality control and monitoring • Groundwater recharge of wells • Protected areas
	Sustainable land management	• Soil conservation, land improvement and rehabilitation • Improved cultivation practices • Soil stabilisation and erosion control (e.g. terracing and contour cropping) • Integrated pest management • Improvement in crop varieties (e.g. drought- and pest-resistant crops, new varieties of existing crops)

Ecosystem-based
adaptation

- Scenario exercises
- Comprehensive assessments establishing linkages between humans and ecosystems; the status and vulnerability of ecosystems etc.
- Sustainable management, conservation and restoration of ecosystems
- Measurement of ecosystem health
- Biodiversity conservation
- Ecosystem management

POLLUTION MANAGEMENT GROUP

Pollution control

Pollution control

- Water quality control
- Groundwater recharge wells
- Wastewater treatment

INFORMATION, KNOWLEDGE CAPACITY ENHANCEMENT SERVICES GROUP

Engineering and design

Protection

- Sea walls, revetments and bulkheads
- Establishment of appropriate building codes and standards
- Improved technical designs and construction
- Increase flood protection
- Artificial sand dunes and dune rehabilitation
- Improved weather forecasting
- Improved hydro-meteorological networks
- Early warning systems for

Early warning and
forecasting

- Meteorological phenomena (e.g. extreme events including hurricanes, cyclones, floods caused by rain, droughts)
- Geological hazards (e.g. earthquakes, volcanoes, landslides)
- Tsunami
- Famine

(continued)

Table 4.2 (continued)

Approach/practice	Technology
	• Flood hazard mapping • Natural disaster response systems • Crop forecasting and modelling • Agriculture and food security management system • Improved data management collection, analysis and dissemination • Remote sensing and geographical information systems (GIS)
ENVIRONMENTAL GOVERNANCE	
Environmental governance	• Establishment of appropriate institutional framework • Establishment of appropriate legal frameworks • Establishment of community participation structures • Knowledge requirements, including access to environmental information and environmental justice • Inclusive participation • Insurance • Earthquake and hurricane catastrophe insurance coverage
Economic mechanisms	

Table 4.3 Indicative overview of multilateral environmental agreements to which Commonwealth small states are a party

MEAs	AB	BAH	BAR	BEL	DOM	GRE	GUY	JAM	SKN	SL	SVG	TT
Wildlife/conservation												
Convention of International Trade in Endangered Species, 1972 (CITES)	A	A	A	A	A	A	A	A	A	A	A	A
Convention on the Conservation of Migratory Species (CMS)	A											
Convention on Wetlands of International Importance especially as Waterfowl Habitats (RAMSAR)	R	R	R	A		A		A		R		A
International Convention for the Regulation of Whaling 1948 and 1959	Ad				Ad	Ad			Ad	Ad		
Protocol Concerning Specially Protected Areas and Wildlife, 1993, to the Cartagena Convention, the Wider Caribbean (RE)	1982				1992	1993			1992	1981		
Convention on Conservation of Nature in the South Pacific (Apia Convention) (RE: Pacific)	S		A	A				S		A		A
Biodiversity/bio-safety, traditional knowledge	1990		2002	2008				1990		2000	1991	1999
International Plant Protection Convention, Rome, 1951	Ad	Ad	Ad	Ad	Ad	Ad	Ad	Ad	Ad	Ad	Ad	Ad
Convention on Biological Diversity, 1992	2006	1997	1976	1987	2006	1985	1970	1969	1990	2002	2001	1970
Cartagena Protocol on Bio-Safety	R	R	R	R	R	R	R	A	R	A	A	R
	1993	1993	1993	1993	1994	1994	1994	1995	1993	2003	1996	1996
	R	R	A	R	A	R	A	S	A	A	A	A
	2003	2004	2002	2004	2004	2004	2008	2001	2001	2005	2003	2000
International Labour Organisation No. 169 Concerning Indigenous and Tribal Peoples in Independent Countries (ILO)					R							
					2002							
Marine protection and safety												
Convention on the Protection and Development of the Marine Environment in the Wider Caribbean, 1983 (Cartagena Convention) (RE)	A		A	A	A	A		R	A	A	A	A
	1986		1985	1999	1990	1987		1987	1999	1994	1990	1986

(continued)

Table 4.3 (continued)

MEAS	AB	BAH	BAR	BEL	DOM	GREN	GUY	JAM	SKN	SL	SVG	TT
Protocol Concerning Cooperation in Combating Oil Spills in the Wider Caribbean, 1983 (RE)	A 1986		A 1985	A 1999	A 1990	A 1987		A 1987	A 1999	A 1984		A 1990
Protocol Concerning Pollution for Land Based Sources and Activities in the Wider Caribbean, 1983 (LBS Protocol) (RE)				A 2008						A 2008		A 2003
Nairobi Convention, 1985 (Amended Convention Text as adopted in 2010)												
Protocol of 1973 to the International Convention for the Prevention of Pollution from Ships as Amended (MARPOL 1973/78)	A 1988	A # 1983	A # 1994	A 1995	A # 2000		A 1997	A 1991	A 1997	A 2000	A 1983	A 2000
International Convention on Civil Liability for Oil Pollution Damage, 1969 (CLC, 1969)	A 1997	A 1976	A 1994	A 1991			A 1997		A 1994		A 1989	
Protocol of 1992 to Amend the International Convention on Civil Liability for Oil Pollution Damage, 1969 (CLC PROT, 1992)	A 2000	A 1997	A 1998	A 1998	A 2001	A 1998		A 1997	A 2004	A 2004	A 2001	A 2000
Convention Relating to Civil Liability in the Field of Marine Carriage of Nuclear Material, 1971 (NUCLEAR, 1971)					A 2001							
International Convention for the Establishment of an International Fund for the Compensation of Oil Pollution, 1971 (FUND, 1971)	A 1997	A 1976	A 1994				A 1997		A 1994			
Protocol of 1992 and 2003 to the International Convention for the Establishment of an International Fund for the Compensation of Oil Pollution, 1971	A 2000	A 1977	A 1998	A 1998	A 2001			A 1997	A 2005	A 2004	A 2001	A 2000
International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (INTERVENTION, 1969)	—	—	2005	—	—			—	—	—	—	—
	A 1976	A 1976	A 1994				A 1977	A 1991	A 2004	A 2004	A 1999	A 2000

Table 4.3 (continued)

MEAs	AB	BAH	BAR	BEL	DOM	GREN	GUY	JAM	SKN	SL	SVG	TT
South Pacific Tuna Treaty (SPTT) (RE, Pacific)												
Chemicals/waste management												
Basel Convention on the Control of Transboundary Movement of Hazardous Waste and their Disposal	A	A	A	A	A		A	A	A	A	A	A
Rotterdam Convention on the Prior Consent	A		S	A	A		A	A	A	S		A
Procedures for Certain Hazardous Chemicals and Pesticides in International Trade	2010		1998	2005	2005		2007	2002	2012	1999		2009
Sustainable land management												
United Nations Convention to Combat Desertification	R	A	A	A	A	A	A	A	A	A	R	A
Atmospheric/climate systems												
Vienna Convention for the Protection of the Ozone Layer, Vienna, 1985	A	A	A	A	A	A	A	A	A	A	A	A
Montreal Protocol on Substances that Deplete the Ozone Layer, 1989*	A	A	A	A	A	A	A	A	A	A	A	A
United Nations Frame-work Convention on Climate Change, 1992	R	R	R	R	R	R	R	R	R	R	R	R
Kyoto Protocol	1993	1994	1994	1994	1993	1994	1994	1995	1993	1993	1996	1994
	R	A	A	R	A	A	A	A	A	R	R	R
	1998	1999	2000	2003	2005	2002	2003	1999	2008	2003	2004	1999
Protection of human health and the environment												
Stockholm Convention on Persistent Organic Pollutants (POPs), 2001	R	R	A	R	A		A	R	A	A	A	A
Waigani Convention, 1995 (RE., Pacific)	2003	2005	2004	2010	2003		2007	2007	2004	2002	2005	2002
Culture and natural heritage												
Convention for the Protection of World Culture and Natural Heritage, 1972	Ac	R	Ac	R	R	Ac	Ac	Ac	Ac	R	R	R
	1983	2014	2002	1990	1995	1998	1977	1983	1986	1991	2003	2005

Table 4.3 (continued)

MEAs	FIJI	KAI	NAU	PNG	SAM	SI	TON	TUV	VAN
Wildlife/conservation									
Convention of International Trade in Endangered Species, 1972 (CITES)	A 1977			A 1975	A 2004	A 2007			A 1989
Convention on the Conservation of Migratory Species (CMS)	A 2013				A 2005				
Convention on Wetlands of International Importance especially as Waterfowl Habitats (RAMSAR)	R 2006	A 2013		R 1993	A 2005				
International Convention for the Regulation of Whaling 1948 and 1959									
Protocol Concerning Specially Protected Areas and Wildlife, 1993, to the Cartagena Convention, the Wider Caribbean (RE)									
Convention on Conservation of Nature in the South Pacific (Apia Convention) (RE; Pacific)									
Biodiversity/bio-safety, traditional knowledge									
International Plant Protection Convention, Rome, 1951	Ad 2005								
Convention on Biological Diversity, 1992	R 1993	A 1994	R 1993	R 1993	R 1994	R 1995	A 1998	R 1993	R 1993
Cartagena Protocol on Bio-Safety	R 2001	R 2004	A 2001	A 2005	R 2002		A 2003		
International Labour Organisation No. 169 Concerning Indigenous and Tribal Peoples in Independent Countries (ILO)									

Marine protection and safety

Convention on the Protection and Development of the Marine Environment in the Wider Caribbean, 1983 (Cartagena Convention) (RE)

(continued)

Table 4.3 (continued)

MEAs	FIJI	KAI	NAU	PNG	SAM	SI	TON	TUV	VAN
Protocol Concerning Cooperation in Combating Oil Spills in the Wider Caribbean, 1983 (RE)									
Protocol Concerning Pollution for Land Based Sources and Activities in the Wider Caribbean, 1983 (LBS Protocol) (RE)									
Nairobi Convention, 1985 (Amended Convention Text as adopted in 2010)				A 1993	A 2002	A 1996		A ## 1989	A 1995
Protocol of 1973 to the International Convention for the Prevention of Pollution from Ships as Amended (MARPOL 1973/78)									
International Convention on Civil Liability for Oil Pollution Damage, 1969 (CLC, 1969)	A 1972			A 1980					
Protocol of 1992 to Amend the International Convention on Civil Liability for Oil Pollution Damage, 1969 (CLC PROT, 1992)	A 1999	A 2007		A 2001	A 2004	A 2004	A 1999	A 2004	A 1999
Convention Relating to Civil Liability in the Field of Marine Carriage of Nuclear Material, 1971 (NUCLEAR, 1971)									
International Convention for the Establishment of an International Fund for the Compensation of Oil Pollution, 1971 (FUND, 1971)									
Protocol of 1992 and 2003 to the International Convention for the Establishment of an International Fund for the Compensation of Oil Pollution, 1971	A 1999	A 2007		A 2001			A 1999	A 2004	A 1999
International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (INTERVENTION, 1969)	A 1972			A 1980			A 1996		A 1992
Protocol Relating to Intervention on the High Seas in Cases of Pollution by Substances Other than Oil, 1973, as Amended (INTERVENTION PROT 1973)							A 1996		A 1992

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, as Amended (LC 1972)	S	DI	S	DI	DI
	1979	1980	1978	1995	1992
1996 Protocol to the International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (LC PROT 1996)				A	A
				2003	1999
International Convention on Liability and Compensation from Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS Convention, 1996)			A	A	
			2004	2003	
International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC Convention, 1990)			A	A	A
			2004	1996	1999
International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (BUNKERS 2001)	A			A	A
	2009			2003	2008
International Convention for the Control and Management of Ship Ballast Water and Sediment, 2004 (BWM 2004)	A			A	
	2007			2014	2005
Convention for the Protection of Natural Resources and Environment of the South Pacific Region (the Noumea Convention) and its Protocols (RE: Pacific)	R	S	R		
	1998	1976	1990		
Marine resources					
United Nations Convention on the Law of the Sea, 1982	R	R	R	R	R
	1982	1997	1995	1995	1999
Agreement Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Species, 1995	R	R	R	R	
	1996	1999	1996	2009	
South Pacific Tuna Treaty (SPTT) (RE: Pacific)	P	P	P	P	P
Chemicals/waste management					
Basel Convention on the Control of Transboundary Movement of Hazardous Waste and their Disposal	A	A	A	A	
	2000	2001	2002	2010	
Rotterdam Convention on the Prior Consent Procedures for Certain Hazardous Chemicals and Pesticides in International Trade			A	A	
			2002	2010	

(continued)

Table 4.3 (continued)

MEAs	FIJI	KAI	NAU	PNG	SAM	SI	TON	TUV	VAN
Sustainable land management									
United Nations Convention to Combat Desertification	A 1998	A 1998	A 1998	A 2000	A 1998	A 1999	A 1998	A 1998	A 1998
Atmospheric/climate systems									
Vienna Convention for the Protection of the Ozone Layer, Vienna, 1985	A 1989	A 1993	A 2001	A 1992	A 1992	A 1993	A 1998	A 1993	A 1994
Montreal Protocol on Substances that Deplete the Ozone, Layer, 1989*	A 1989	A 1993	A 2001	A 1992	A 1992	A 1993	A 1998	A 1993	A 1994
United Nations Frame-work Convention on Climate Change, 1992	R 1993	R 1995	R 1993	R 1993	R 1994	R 1994	R 1998	R 1993	R 1993
Kyoto Protocol	R 1998	A 2000	A 2001	R 2002	R 2004	R 2003	R 2008	R 1998	A 2001
Protection of human health and the environment									
Stockholm Convention on Persistent Organic Pollutants (POPs), 2001	R 2001	R 2004		R 2003	R 2002	A 2004	R 2009	A 2004	R 2005
Waigani Convention, 1995 (RE.. Pacific)	R	R	S	R	R	R	R	A	R
Culture and natural heritage									
Convention for the Protection of World Culture and Natural Heritage, 1972	R 1990	Ac 2000		Ac 1997	Ac 2001	A 2001	Ac 2004	A	R 2002

Table 4.3 (continued)

MEAs	MUR	SEY	MALD	BRU	BOT	LES	SWA	NAB	CYP	MAL
Wildlife/conservation										
Convention of International Trade in Endangered Species, 1972 (CITES)	R 1975	A 1977	A 2012	A 1990	A 1997				R 1974	A 1982
Convention on the Conservation of Migratory Species (CMS)	A 2004	A 2005							A 2001	
Convention on Wetlands of International Importance especially as Waterfowl Habitats (RAMSAR)	A 2001	A 2005				A 2004			A 2001	A 1989
International Convention for the Regulation of Whaling 1948 and 1959										
Protocol Concerning Specially Protected Areas and Wildlife, 1993 to the Cartagena Convention, the Wider Caribbean (RE)										
Convention on Conservation of Nature in the South Pacific (Apia Convention) (RE; Pacific)										
Biodiversity/bio-safety, traditional knowledge										
International Plant Protection Convention, Rome, 1951				Ad 2006	Ad 2009			Ad 2007		Ad 1975
Convention on Biological Diversity, 1992	R 1992	R 1992	R 1992	A 2008	A 2008	Rt 1995	Rt 1995	R 1997	R 1996	R 2000
Cartagena Protocol on Bio-Safety	A 2002	R 2004	A 2002		R 2002	A 2001	A 2006	R 2005	A 2003	A 2007
International Labour Organisation No. 169 Concerning Indigenous and Tribal Peoples in Independent Countries (ILO)										

Marine protection and safety

Convention on the Protection and Development of the Marine Environment in the Wider Caribbean, 1983 (Cartagena Convention) (RE)

(continued)

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, as Amended (LC 1972)	DI	1984							DI	1989	DI	1990
1996 Protocol to the International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (LC PROT 1996)												
International Convention on Liability and Compensation from Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS Convention, 1996)									A			2005
International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC Convention, 1990)	A	1999	A	1999					A	2007	A	2003
International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (BUNKERS 2001)											A	A
International Convention for the Control and Management of Ship Ballast Water and Sediment, 2004 (BWM 2004)												2005
Convention for the Protection of Natural Resources and Environment of the South Pacific Region (the Noumea Convention) and its Protocols (RE: Pacific)												2008
Marine resources												
United Nations Convention on the Law of the Sea, 1982	R	1996	R	1991	R	2000	S	1982	R	1990	R	1988
Agreement Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Species, 1995	R	1997	R	1998	R	1998					R	1993
South Pacific Tuna Treaty (SPTT) (RE: Pacific)												
Chemicals/waste management												
Basel Convention on the Control of Transboundary Movement of Hazardous Waste and their Disposal	A	1992	A	1993	A	1992	A	2012	A	1998	A	1992
												2000

(continued)

Table 4.3 (continued)

MEAS	MUR	SEY	MALD	BRU	BOT	LES	SWA	NAB	CYP	MAL
Rotterdam Convention on the Prior Consent Procedures for Certain Hazardous Chemicals and Pesticides in International Trade	A 2005	S 1998	A 2006		A 2008	A 2008	A 2012	R 2005	R 2004	
Sustainable land management										
United Nations Convention to Combat Desertification	R 1996	R 1997	A 2002	A 2002	R 1996	R 1995	R 1996	R 1997	A 2000	R 1998
Atmospheric/climate systems										
Vienna Convention for the Protection of the Ozone Layer, 1985	A 1992	A 1993	A 1988	A 1990	A 1991	A 1994	A 1992	A 1993	A 1992	A 1988
Montreal Protocol on Substances that Deplete the Ozone Layer, 1989*	A 1992	A 1993	A 1989	A 1993	A 1991	A 1994	A 1992	A 1993	A 1992	A 1989
United Nations Frame-work Convention on Climate Change, 1992	R 1992	R 1992	R 1992	R 2007	R 1994	R 1995	R 1996	R 1995	R 1997	R 1994
Kyoto Protocol	A 2001	R 2002	R 1998	A 2009	A 2003	A 2003		A 2003	A 1999	R 2001
Protection of human health and the environment										
Stockholm Convention on Persistent Organic Pollutants (POPs), 2001	R 2004	A 2008	A 2006	S 2002	A 2002			A 2005	A 2005	S 2001
Waigani Convention, 1995 (RE., Pacific)										
Culture and natural heritage										
Convention for the Protection of World Culture and Natural Heritage, 1972	R 1995	Ac 1990	Ac 1986	Ac 2011	Ac 1998	Ac 2003	R 2005	Ac 2000	Ac 1975	Ac 1978

Sources: Completed by CaribInvest (West Indies) Limited, March 2014.

Sources by clusters:

* Excludes the various amendments: London Amendment (10.8.1992), Copenhagen Amendment (14.6.1994), Montreal Amendment (10.1.1.1999) and Beijing Amendment (25.2.2002).

Including exceptions

Legend: Caribbean small states: AB = Antigua and Barbuda; BAH = The Bahamas; BAR = Barbados; BEL = Belize; DOM = Dominica; GREN = Grenada; GUY = Guyana; JAM = Jamaica; SKN = St Kitts and Nevis; SL = St Lucia; SVG = St Vincent and the Grenadines; TT = Trinidad and Tobago; **Pacific small states (that are also SIDS):** FIJI = Republic of Fiji; KAI = Kiribati; NAU = Nauru; PNG = Papua New Guinea; SAM = Samoa; SI = Solomon Islands;

TON = Tonga; TUV = Tuvalu; VAN = Vanuatu; **African small states (that are also SIDS):** MUR = Mauritius; SEY = Seychelles; **Asian small states:** BRU = Brunei Darussalam; MALD = Maldives; **African small states (that are not SIDS):** BOT = Botswana; LES = Lesotho; NAB = Namibia; SWA = Swaziland;

European small states: CYP = Cyprus; MAL = Malta

A = Accession – the act whereby a state accepts the offer or the opportunity to become a party to a treaty already negotiated and signed by other states. It has the same legal effect as ratification. Accession usually occurs after the treaty has entered into force. See Arts. 2 (1) (b) and 15, Vienna Convention on the Law of Treaties between States and International Organizations or between International Organizations 1986

Ac = Acceptance: the instruments of 'acceptance' or 'approval' of a treaty have the same legal effect as ratification and consequently express the consent of a state to be bound by a treaty. Arts. 2 (1) (b) and 14 (2), Vienna Convention on the Law of Treaties 1969

Ad = Adherence

R = Ratification – defines the international act whereby a state indicates its consent to be bound to a treaty if the parties intended to show their consent by such an act. See Arts. 2 (1) (b), 14 (1) and 16, Vienna Convention on the Law of Treaties 1969.

S = Signature; **DI** = Date of deposit of instrument; **EF/Su** = Date of Entry into Force or Succession; **P** = Party

RE = Regional MEA

Wildlife/conservation: CITES Secretariat, available at: www.cites.org; CMS Secretariat, available at www.cms.int/; RAMSAR Convention Secretariat, available at: www.ramsar.org; International Whaling Commission, available at: www.iwcoffice.org/commission/member.htm; and UNEP, available at: [www.cep.unep.org](http://www.cep.unep.org/cartagena-convention/#status)

Biodiversity/bio-safety and traditional knowledge: International Plant Protection Convention, Legal Office, available at www.fao.org/Legal/TREATIES/004s-e.htm; Convention on Biological Diversity Secretariat, available at: www.cbd.org; ILO Convention on Indigenous and Tribal Peoples, 1989 (No. 169), A Manual, available at: www.ilo.org (Date of Ratification as of January 2002)

Marine protection and safety: UNEP, available at: www.cep.unep.org/cartagena-convention/#status; and IMO, Status of Multilateral Conventions and Instruments in Respect of which the International Maritime Organization or its Secretary-General Performs Depositary or other Functions, as at 16 May 2014, 006 IMO, available at: www.imo.org

Marine resources: United Nations, Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, available at: www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm#

Chemical/waste management: Basel Convention Secretariat, available at: www.basel.int/convention/about.html and the Rotterdam Convention at www.pic.int/home.php?type=t&id=63

Sustainable land management: UNCCD Secretariat, available at: www.unccd.int

Atmospheric/climate systems: UNEP Ozone Secretariat, available at: http://ozone.unep.org/Ratification_status/and/UNFCC_Secretariat at www.unfccc.org

Protection of human health and the environment: Stockholm Convention Secretariat, available at: <http://chm.pops.int/Countries/StatusofRatification/tabid/252/language/en-US/Default.aspx>

Culture and natural heritage: UNESCO World Heritage, available at: www.unesco.org (accessed 15 February 2014).

Table 4.4 Overview of the national governance structure for environmental management in Commonwealth small states

Country	Institutional framework for environmental management and planning	Legislative framework	Multilateral environmental agreement to which country is a party/other regional instruments
Africa			
Botswana	The Ministry of Environment, Wildlife and Tourism (MEWT), established in September 2002, is the main institutional mechanism in Botswana with responsibility for environmental management and planning. It comprises a number of departments, including the Departments of Wildlife and National Parks, Departments of Environmental Affairs (DEA), Waste Management and Pollution Control (DMPC) and National Museum and Monuments (NMM), as well as the Forest Conservation Botswana (FCB), established in 2008 as a company to administer the Tropical Forest Conservation Fund.		Is party to the Southern African Development Community (SADC) Treaty, the founding document for the establishment of SADC. One of the co-operation areas highlighted in the treaty is natural resources and the environment.
Lesotho	The National Environment Secretariat (NES) (Department of Environment), which was established in April 1994, is currently under the Ministry of Tourism, Environment and Culture and is the lead agency for environmental management and planning in Lesotho.	The <i>Environment Act 2008</i> establishes the Department of Environment. The Act provides for sustainable management and of Lesotho's environment and all its natural resources.	Is party to the Southern African Development Community (SADC) Treaty, the founding document for the establishment of SADC. One of the co-operation areas highlighted in the treaty is natural resources and the environment.

Namibia	Ministry of Environment and Tourism is the main institutional mechanism for environmental management and planning in Namibia. The ministry comprises six Directorates which are responsible for fulfilling the ministry's objectives: • Directorate of Administration, Finance and Human Resource • Directorate of Environmental Affairs • Directorate of Regional Services and Parks Management • Directorate of Natural Resources Management • Directorate of Tourism and Gaming • Directorate of Planning and Technical Services.	Is party to the Southern African Development Community (SADC) Treaty, the founding document for the establishment of SADC. One of the co-operation areas highlighted in the treaty is natural resources and the environment.
Swaziland	The Swaziland Environment Authority (SEA), established through an Act of Parliament in November 1992, is the main body dealing with environmental issues in Swaziland. The SEA's responsibilities include co-ordination of environmental issues and developing environmental policies, monitoring environmental quality and setting environmental standards, as well as to implement enforcing mechanisms to ensure that environmental consideration is taken into account in the authorisation and management of development.	The Environmental Management Act No. 5 of 2002 repeals the Swaziland Environment Act 1992, and transforms the Swaziland Environment Authority created by it into a corporate body. Among its powers is its authority to halt developments that have not been adequately subjected to environmental impact analysis. Is party to the Southern African Development Community (SADC) Treaty, the founding document for the establishment of SADC. One of the co-operation areas highlighted in the treaty is natural resources and the environment.

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Table 4.4 (continued)

Country	Institutional framework for environmental management and planning	Legislative framework	Multilateral environmental agreement to which country is a party/other regional instruments
Caribbean			
Antigua and Barbuda	The Environmental Division (ED) of the Ministry of Agriculture, Lands, Housing and the Environment, established by a Decision of Cabinet in 1997, is the main functional mechanism for the co-ordination of environmental management and planning in Antigua and Barbuda. The ED has no legal mandate in the laws of Antigua and Barbuda to enforce environmental compliance.	No comprehensive environmental legislation exists in Antigua and Barbuda. There is general consensus that the legislation needs upgrading, with a view to addressing environmental and natural resources management issues in a more holistic and integrated manner. The Draft Environmental Protection and Management Act consolidates a legal regime for sustainable environmental protection and management in Antigua and Barbuda.	Is a signatory to the St George's Declaration of Principles for Environmental Sustainability (SGD), which is structured around 21 Principles. Is a signatory to the Revised Treaty of Chaguaramas establishing the Caribbean Community, including the CARICOM Single Market and Economy and hence will be part of the Community Environmental Protection and Natural Resources Management Framework.
The Bahamas	The main institutional mechanism for environmental management in The Bahamas is the Bahamas Environment, Science and Technology (BEST) Commission, located under the Office of the Prime Minister. The primary role of the BEST Commission is to advise the Bahamas Government on environmental matters, including on environmental impacts of proposed development projects and environmental policy and management.		

Barbados	Ministry of Environment and Drainage is the main institutional framework for environmental management in Barbados.	Generally the legislative framework in Barbados has evolved in a piecemeal fashion in response to specific issues. This has resulted in the environment-related legislation being dispersed over several statutes. Much of the current environmental legislation exhibits a number of procedural weaknesses including fragmentation, overlapping jurisdiction and institutional weaknesses. There is therefore a need for a comprehensive overhaul of the environment-related legislation in Barbados.	Is a signatory to the Revised Treaty of Chaguaramas establishing the Caribbean Community, including the CARICOM Single Market and Economy and hence will be part of the Community Environmental Protection and Natural Resources Management Framework. A major gap in the national legislation with respect to MEAs is that many of them to which the country is party have not been transformed in to national legislation. Hence the rights and obligations therein have no force in domestic legislation if they are not transformed into national law.
Belize	The Department of the Environment (DOE) of the Ministry of Forestry, Fisheries and Sustainable Development, established in September 1989, is the main institutional mechanism in Belize responsible for environmental management and planning. In addition the DOE is responsible for the enforcement of several Regulations made under the Environmental Protection Act. These include the Environmental Impact Assessment Regulations (SI 107 of 1995), the Environmental	The Environmental Protection Act (EPA) 1992 conferred broad statutory powers on the DOE concerning a wide range of environmental issues.	Is a signatory to the Revised Treaty of Chaguaramas establishing the Caribbean Community, including the CARICOM Single Market and Economy and hence will be part of the Community Environmental Protection and Natural Resources Management Framework. Belize is also party to the Constitutive Agreement of the Central American Commission for Environment and Development (CCAD).

(continued)

Table 4.4 (continued)

Country	Institutional framework for environmental management and planning	Legislative framework	Multilateral environmental agreement to which country is a party/other regional instruments
Dominica	Protection (Effluent Limitations) Regulations (SI 94 of 1995) and the Pollution Regulations (SI 56 of 1996). The statutory bodies which fall under the ministry are the Coastal Zone Management Authority and the Protected Areas Conservation Trust (PACT). The Environmental Coordinating Unit (ECU) of the Ministry of Environment, Natural Resources, Physical Planning and Fisheries is the main institutional mechanism with responsibility for environmental management in Dominica. The ECU has no legal mandate in the laws of Dominica to enforce environmental compliance.	There is general consensus that the environmental and natural resources laws of Dominica require updating and in some instances the enactment of new legislation.	Is a signatory to the St George's Declaration of Principles for Environmental Sustainability (SGD), which is structured around 21 Principles. Is a signatory to the Revised Treaty of Chaguaramas establishing the Caribbean Community, including the CARICOM Single Market and Economy and hence will be part of the Community Environmental Protection and Natural Resources Management Framework. A major gap in Dominica's national legislation is that many of the MEAs to which the country is party have not been incorporated into national legislation; hence the rights and obligations therein have no force in domestic legislation if they are not transformed into national law.

Grenada	The Environmental Unit of the Ministry of Agriculture, Lands, Forestry, Fisheries and Environment is the main institutional mechanism for environmental management of Grenada.	No comprehensive legislation exists. Legislation is addressed in a piecemeal manner responding to specific issues.	Is a signatory to the St George's Declaration of Principles for Environmental Sustainability (SGD), which is structured around 21 Principles. Is a signatory to the Revised Treaty of Chaguaramas establishing the Caribbean Community, including the CARICOM Single Market and Economy and hence will be part of the Community Environmental Protection and Natural Resources Management Framework. Is a signatory to the Revised Treaty of Chaguaramas establishing the Caribbean Community, including the CARICOM Single Market and Economy and hence will be part of the Community Environmental Protection and Natural Resources Management Framework. Is a signatory to the <i>Amazon Cooperation Treaty Organization</i> (ACTO), which has as its overarching goal the promotion of sustainable development of the Amazon Basin.
Guyana	The Environmental Protection Agency, established on June 5, 1996, pursuant to Environmental Protection Act (No. 11, 1996), is the main institutional mechanism for environmental management in Guyana. The Act mandates the Agency to oversee the effective management, conservation, protection and improvement of the environment, as well as to take the necessary measures to ensure the prevention and control of pollution, and assessment of the impact of economic development. Other agencies which are located in the Ministry of Natural Resources and Environment are Guyana Forestry Commission, Guyana Wildlife, National Parks Commission, Guyana Lands and Survey Department, Guyana Geology and Mines Commission and Guyana Gold Board.	Environmental Protection Act (No. 11, 1996), pursuant to Part II 4 (1), sets out the functions of the EPA. These can be classified broadly as being regulatory, co-ordinating and promoting public participation in environmental protection.	

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Table 4.4 (continued)

Country	Institutional framework for environmental management and planning	Legislative framework	Multilateral environmental agreement to which country is a party/other regional instruments
Jamaica	The National Environment and Planning Agency (NEPA), established in April 2001, is the main institutional mechanism dealing with environmental management in Jamaica. It resulted from the amalgamation of three entities: the Natural Resources and Conservation Authority (NRCA), the Town and Country Planning Authority (TCPA) and the Land Development and Utilisation Commission (LDUC). It is part of the Ministry of Water, Land, Environment and Climate Change, which was created on 6 January 2012.	NEPA operates as an Executive Agency under the Executive Agency Act 2002.	Is a signatory to the Revised Treaty of Chaguaramas establishing the Caribbean Community, including the CARICOM Single Market and Economy and hence will be part of the Community Environmental Protection and Natural Resources Management Framework.
St Kitts and Nevis	The Department of Physical Planning and Environment of the Ministry of Sustainable Development is the main institutional mechanism in St Kitts and Nevis responsible for environmental management and planning. More specifically it is charged with the responsibility for promoting the rational use of lands and at the same time taking steps to ensure the protection and management of the environment in a sustainable way.		Is a signatory to the St George's Declaration of Principles for Environmental Sustainability (SGD), which is structured around 21 Principles. Is a signatory to the Revised Treaty of Chaguaramas Establishing the Caribbean Community, including the CARICOM Single Market and Economy and hence will be part of the Community Environmental Protection and Natural Resources Management Framework.

St Lucia	The Ministry of Sustainable Development and Technology is the main institutional entity with responsibility for environmental management in St Lucia.	No comprehensive legislation exists. Legislation is addressed in a piecemeal manner responding to specific issues. Draft Environmental Management Act, based on the OECS Model Environmental Management 2007 Act (OECS/ESDU 2007), makes provision for the creation of a Department of the Environment.	Is a signatory to the St George's Declaration of Principles for Environmental Sustainability (SGD), which is structured around 21 Principles. Is a signatory to the Revised Treaty of Chaguaramas establishing the Caribbean Community, including the CARICOM Single Market and Economy and hence will be part of the Community Environmental Protection and Natural Resources Management Framework.
St Vincent and the Grenadines	Environmental Management Department of the Ministry of Health and the Environment is the main institutional mechanism for environmental management in St Vincent and the Grenadines. Created in January 2009. The institutional framework for environmental management within is weak.	The current legislation is fragmented and dispersed over several statutes, charging different and unco-ordinated government bodies, departments and entities with environmental administration. A Draft Environmental Management Act 2009 exists. Based on the draft Act, the Government of St Vincent and the Grenadines has adopted a governance model in the form of a Department of the Environment, for addressing the environmental challenges confronting the country.	Is a signatory to the St George's Declaration of Principles for Environmental Sustainability (SGD), which is structured around 21 Principles. Is a signatory to the Revised Treaty of Chaguaramas establishing the Caribbean Community, including the CARICOM Single Market and Economy and hence will be part of the Community Environmental Protection and Natural Resources Management Framework. A major gap in St Vincent and the Grenadines national legislation is that many of the MEAs to which the country is party have not been incorporated into national legislation; hence the rights and obligations therein have no force in domestic legislation if they are not transformed into national law.

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Table 4.4 (continued)

Country	Institutional framework for environmental management and planning	Legislative framework	Multilateral environmental agreement to which country is a party/other regional instruments
Trinidad and Tobago	The Ministry of Housing, Lands and Marine Affairs has overall responsibility for environmental management and planning in Trinidad. Its Environmental Policy and Planning Division (EPPD) has the main responsibility for guiding and formulating environmental policy, as well as monitoring and evaluating the implementation and effectiveness of environmental policy; design and implementation of environmental programmes and projects pursuant to national policy objectives; pollution control; and hazardous waste and substance management. The ministry's environmental mandate is also implemented through a number of agencies, including the Chaguaramas Development Authority (CDA), the Community-based Environmental Protection and Enhancement Programme Company Limited (CEPEP) and the Environmental Management Authority (EMA). The EMA plays a very important role in environmental management and planning in Trinidad and Tobago. Its mandate is to write and enforce laws and regulations for	The Environmental Management Act (EM Act), Chapter 35:05 of 2000, which repealed Environmental Management Act No. 3 of 1995, which established the Environmental Management Authority (EMA), provides the main legislative framework for environmental management and planning in Trinidad and Tobago	Is a signatory to the Revised Treaty of Chaguaramas establishing the Caribbean Community, including the CARICOM Single Market and Economy and hence will be part of the Community Environmental Protection and Natural Resources Management Framework.

environmental management, to educate the public about the nation's environmental issues and to control and prevent pollution, as well as conserve natural resources. The MEA is complemented by a tribunal, known as the Environmental Commission, a superior court of record that hears appeals on decisions taken by the Authority. The Government of Trinidad and Tobago also has a Ministry of Planning and Sustainable Development. One of the ministry's strategic obligations is the co-ordination of the National Framework for Sustainable Development.

Indian Ocean
Maldives

The Environmental Protection Agency (EPA, Ministry of Environment) is the main institutional mechanism with responsibility for environmental management and planning in Maldives.

The Constitution of the Republic of Maldives 2008 contains a number of provisions regarding natural resources and environment (i.e. Articles 22, 23, 67, 232).

The Environmental Protection and Preservation Act of Maldives, 1993, sets the basic principles and rules of environmental protection in Maldives.

Ministry of Environment and Sustainable Development

Environment Protection Act 2002, as amended in 2008, provides the legal framework for environmental management and planning in Mauritius.

Mauritius

(continued)

Table 4.4 (continued)

Country	Institutional framework for environmental management and planning	Legislative framework	Multilateral environmental agreement to which country is a party/other regional instruments
Seychelles	The Department of Environment of the Ministry of Environment and Energy is the main institutional mechanism for environmental management and planning in Seychelles.	The Constitution at Article 38 stipulates the right of every person to live in and enjoy a clean, healthy and ecologically balanced environment, and Article 40 makes it a duty of every citizen to protect, preserve and improve the environment. Environmental Protection Act 1994 provides the legal framework for environmental management and planning in Seychelles.	
South-east Asia			
Brunei	Department of Environment, Parks and Recreation is the main institutional mechanism for environmental planning and management in Brunei Darussalam.		
Darussalam			
Pacific			
Fiji Islands	The Department of the Environment of the Ministry of Local Government, Urban Development, and Housing and Environment is the main institutional mechanism for environmental management in Fiji.	Environment Management Act 2005 and its associated regulations provide the legal framework for national environmental co-ordination and planning, as well as establish powers to	Environment Management Act 2005 contains provision necessary for the implementation of Fiji's obligations under a number of MEAs such as the Convention on Biological Diversity and the Convention on the

Protection of Natural Resources and the Environment of the South Pacific ('Noumea Convention').

control environmentally harmful activities.
A draft *Sustainable Development Bill* was completed in November 1996 which, when enacted, will establish a sustainable development legal framework, one of the first countries in the world to do so.

The ECD's activities are empowered by the Environment Act 1999 (with 2007 amendments), which provides for the protection, improvement and conservation of the Kiribati environment.

The Environment and Conservation Division (ECD), Ministry of Environment, Lands and Agricultural Development, is the main institutional mechanism for environmental management in Kiribati. Its mandate is to safeguard the natural environment upon which life depends and to protect human health.

Kiribati

The Environment (Amendment) Act 2007 contains provisions necessary for the implementation of MEAs such as the Convention for the Protection of the World Cultural and Natural Heritage, and the Convention on Biological Diversity.

Nauru is embarking on a legislation consolidation project with a view to developing a co-ordinated system for the management of legal information.

The Ministry for Commerce, Industry and Environment has responsibility for environmental management in Nauru.

Nauru

The key piece of legislation, among others, which provides for the management of the environment and conservation in Samoa, is the Lands, Survey and Environment Act 1989.

Ministry of Natural Resources and the Environment is the main institutional entity responsible for the management of the environment in Samoa.

Samoa

(continued)

Table 4.4 (continued)

Country	Institutional framework for environmental management and planning	Legislative framework	Multilateral environmental agreement to which country is a party/other regional instruments
Solomon Islands	Ministry of Environment, Climate Change, Disaster Management and Meteorology is the main institutional entity responsible for the management of the environment in Solomon Islands.		
Tonga	The Ministry of Environment and Climate Change is the main institutional entity responsible for the management of the environment in Tonga.	The Ministry of Environment and Climate Change is established pursuant to the Environment Management Act 2010. The Act provides for the protection and proper management of the environment and the promotion of sustainable development.	
Tuvalu	Ministry of Natural Resources, Energy and Environment is the main institutional entity responsible for the management of the environment in Tuvalu.		
Vanuatu	The Department of Environment and Conservation of the Ministry of Land and Natural Resources is the main institutional mechanism for environmental management. Established in 1986, it has the objective of formulating and implementing environmental policies to ensure ecologically sustainable development in Vanuatu.	The Environmental Management and Conservation Act No. 12 of 2002 makes provisions for the functioning of the Department of Environment.	

Papua New Guinea

Established in 1985, the Department of Environment and Conservation (DEC) is the key institutional mechanism for environmental management in PNG.

The Environment Act 2000 is the primary legislation in PNG which regulates matters relating to the environment. The Act was amended in 2010 by the Environment (Amendment) Act 2010 to allow retrospective certification and authorisation of activities which may otherwise have been deemed illegal under the Act.

Mediterranean

Cyprus

The main institutional mechanism with responsibility for environmental management and planning in Cyprus is the Department of the Environment of the Ministry of Agriculture, Natural Resources and Environment.

Environmental laws are influenced significantly by European Community Environmental Law.

Cyprus is a member of the European Union and it is subject to the environmental laws of the EU. Accordingly, over 250 European legislative acts have been harmonised into national laws, thus considerably strengthening the foundation for environmental management and policy in the country.

(continued)

Table 4.4 (continued)

Country	Institutional framework for environmental management and planning	Legislative framework	Multilateral environmental agreement to which country is a party/other regional instruments
Malta	The main institutional entity for environmental management in Malta is the Ministry for Sustainable Development, the Environment and Climate Change.	The Sustainable Development Act 2012 has the objective of mainstreaming sustainable developments across the workings of government, to raise awareness of sustainable development issues and practices across society and to promote the adoption thereof, as well as to set up a Guardian of Future Generations.	Malta is a member of the European Union and it is subject to the environmental laws of the EU.

Sources: A number of sources were consulted in compiling the information contained in this table. These are listed by individual countries as follows:

- Antigua and Barbuda: Cariblnvest (West Indies) Ltd, Diagnostic and Analytical Review of Environmental Governance Systems in Antigua and Barbuda, the Caribbean Community Secretariat (CARICOM), December 2012.
- Belize: Department of the Environment, available at: www.doe.gov.bz (accessed 15 February 2014).
- Dominica: Cariblnvest (West Indies) Ltd, Diagnostic and Analytical Review of Environmental Governance Systems in Dominica, the Caribbean Community Secretariat (CARICOM), January 2011.
- Guyana: Ministry of Natural Resources and the Environment, available at www.nre.gov.gy/index.htm (accessed 15 February 2014).
- Namibia: www.met.gov.na (accessed 15 February 2014).
- Vanuatu: Ministry of Lands and Natural Resources, available at: www.mol.gov.vu/environment-home.php (accessed 15 February 2014).
- St Vincent and the Grenadines: Cariblnvest (West Indies) Ltd, Diagnostic and Analytical Review of Environmental Governance Systems in St Vincent and the Grenadines, the Caribbean Community Secretariat (CARICOM), March 2012.
- Kiribati: Ministry of Environment, Lands and Agricultural Development, available at: www.environment.gov.ki/index.php/about-us (accessed 15 February 2014).
- Papua New Guinea: Norton Rose Fulbright, PNG Legal Briefing: Amendments to Environment Act 2000, February 2012, available at: www.nortonrosefulbright.com/knowledge/publications/62782/png-legal-briefing-amendments-to-environment-act-2000#section3 (accessed 15 February 2014).
- Botswana: MEAs, available at: www.mewt.gov.bw/uploads/files/compendium_of_meas.pdf (accessed 15 February 2014).
- Trinidad and Tobago: Ministry of Housing and Marine Affairs, available at: www.mphe.gov.tt/about-mhe/environment.html; Environmental Management Authority, available at: www.ema.co.tt/new/index.php/about-us/history; Ministry of Planning and Sustainable Development, available at: www.planning.gov.tt/about/about-us (accessed 15 February 2014).

Table 4.5 Elements for the development of the Environmental Management Quality and Effectiveness Composite Index

Thematic areas	Environmental issue	Possible indicator(s)
E Environmental health	Solid/hazardous waste management	• Percentage of country having regular solid waste collection • Availability of sanitary landfill as the main method of solid waste disposal • Availability of special facility for hazardous waste disposal
		• Incineration of ship-generated waste at port of entry • Percentage of waste removed from the waste stream through recycling and other means
	Wastewater management	• Percentage of country served by wastewater facility • Specific regulations in place for the treatment of wastewater at the household level • Adequacy of disposal method for the disposal of wastewater collected from households which are not connected to a wastewater facility
	Emissions	Absolute and/or per capita emissions of: • Greenhouse gases (GHGs) • Ozone-depleting substances • Volatile organic compounds
E Ecosystem management	Renewable energy	• Percentage of renewable energy in the primary energy consumption • Percentage of energy supplied through the grid generated from renewable energy sources • Market penetration of renewable energy sources • Ecosystem and natural capital accounting by integrating the System of Economic and Environmental Accounting (SEEA)
		• Percentage of main water sources legally protected • Percentage of households having access to treated piped water • Percentage of treated water loss from the system
	Water resources treatment and distribution	• Availability of standard procedures for monitoring the quality of water resources on a routine basis

(continued)

Table 4.5 (continued)

Thematic areas	Environmental issue	Possible indicator(s)
Coastal and marine protection and management		• Maritime boundaries delimited • Coastal Zone Management Authority legally mandated to be involved in the decision-making process with respect to all developments in the designated coastal zone • Systematic and routine coastal water quality and assessment programme in operation • Systematic and routine coastal erosion monitoring and assessment programme in operation • Percentage of national territory legally protected • Percentage of ocean under national jurisdiction legally protected • Legal provisions contained in national law for access to genetic resources (including traditional knowledge and folklore) and the equitable and fair distribution from the benefits derived from its use
		• Percentage of arable land used for purpose other than agriculture over the past 10 years • National coverage of hydro-meteorological network • Weather forecasting coverage • Percentage of country under forest cover • Early warning system for [meteorological phenomena] [drought] [tsunami] in operation • National system of disaster shelters established, operational and listed • Hazard response protocols for the different types of hazards in operation and known to key actors and the general public • Percentage of population having catastrophic insurance coverage • Crop forecasting and modelling system operational and providing data for decision-making
Sustainable biodiversity		
Sustainable land management		
Climate		
Forests		
Natural hazard risk assessment and management		

P Private sector performance	Private sector performance	• Percentage of targeted private sector enterprises ISO 14000 compliant and/or actively participating in a voluntary sustainability scheme
En Environmental governance	International environmental governance	• Percentage of targeted private sector enterprises reporting regularly on sustainability issues • Ratification of international and regional environmental agreements
		• Incorporation of MEA into national law, making the obligations contained therein available in law to the nationals of that member state
	National environmental governance	• Dedicated institutional mechanism for environmental management supported by a comprehensive legal framework which clearly outlines its legal mandate • Extent to which appropriate access to information concerning the environment that is held by public authorities is provided by law • Extent to which the law provides adequate opportunity to participate in decision-making processes relating to environmental matters • Extent to which the law provides for effective access to judicial and administrative proceedings, including redress and remedy, with respect to environmental issues

Table 4.6 Indicative priority areas for policy intervention

Building blocks for the management of environmental resources and services		Indicative priority areas for policy intervention
Pollution management group		
Solid/hazardous waste management Recycled materials Wastewater management Air pollution control Noise and vibration abatement Remediation and clean-up of soils, surface water or groundwater		Establishment of technical co-operation programmes to enable the creation and the strengthening of regional mechanisms for the management of hazardous waste as well as ship-generated waste. Sustained financing for national waste management programmes as well as increased investment and co-operation in developing integrated waste management and technologies.
Information knowledge/capacity enhancement services group		
Analytical services, data collection, analysis and assessment Environmental research and development		- Assessment of the impact of non-tariff measures (NTMs) and non-tariff barriers (NTBs) on SIDS. - Establishment of a small states (including SIDS) environmental, sustainable statistics and information programme, with emphasis on upgrading national statistical systems and mainstreaming sustainable development data collection and analysis. - Enhancement of regional and small states co-operation for research and technological development. - Investments in small states to facilitate the development of science, technology and innovation for sustainable development, with specific emphasis on research and development. - Development of marine scientific and technological capacity. - Marine scientific research in the sea bed area beyond national jurisdiction, with a view to understanding the benefits to be accrued from prospecting, exploration and future exploitation of these resources. - Promotion of inter-regional IDS-SIDS co-operation for research and technological development.

Environmental education, training and information

- Establishment of a small states/SIDS Technical Assistance Programme to support capacity building and the transfer of environmentally sound technologies.
- Support investments in formal and non-formal education, including the use, development and sharing of open learning/distance education in knowledge and technologies in support of SIDS sustainable development.
- Establish a technology mechanism in the form of a climate technology centre and network to enhance technology co-operation and transfer to developing countries.
- Capacity building for negotiating trade and partnership agreements and navigating the complex requirements for accessing certain funds.
- Investment in education, training and skills development for all, as well as improving access to formal and non-formal education, including entrepreneurial skills.
- A systemic approach to strengthening statistical systems and the incorporation of environmental data as a key data set.
- Strengthening national statistical and information systems, including data collection and management, and analytical capabilities for decision-making, and monitoring and evaluation systems for sustainable development.
- Promotion of South and triangular co-operation which provides additional opportunities for strengthening capacity and sharing knowledge.

Cleaner technology and production group

- Cleaner/resource efficient technologies and process
- Cleaner/resource-efficient products
- Establishment of a small states/SIDS-specific platform on sustainable consumption and production.
- Establishment of a private-sector-focused small states/SIDS inter- and intra-regional trade information and facilitation platform, as well as facilitating the conditions that foster entrepreneurship and innovation, building capacity and increased competitiveness of micro, small and medium enterprises (MSMEs).
- Establishment of a dedicated technology transfer facilitation mechanism to provide environmentally sound and appropriate technologies to developing countries.

(continued)

Table 4.6 (continued)

Building blocks for the management of environmental resources and services	Indicative priority areas for policy intervention
Resource management group Renewable energy	• Establishment of a dedicated technology transfer facilitation mechanism to provide, inter alia, environmentally sound and appropriate technologies. • Access to affordable, clean energy as well as the continued diversification of energy sources, enhanced technology sharing and promotion of renewable energies. • Provision of special funding in the assessment and identification of renewable energy technologies, including technical assistance and capacity building. • Endorsement of the Barbados Declaration on Achieving Sustainable Energy for All in Small Island Developing States.
Water resources treatment and distribution	• Adoption and implementation of Integrated Water Resources Management (IWRM).
Sustainable biodiversity	• Development of a specific legal regime for the conservation and sustainable use of marine biodiversity of areas beyond national jurisdiction.
Coastal and marine protection and management	• 'Blue economy' as a distinct tool that offers specific mechanisms for coastal countries to address their sustainable development challenges. Blue economy must address and incorporate research, assessment, valuation and management of the blue capital; more effective international ocean governance; data collection, management and sharing; promotion of blue carbon on the carbon trading agenda; enabling mechanisms, including technology transfer, capacity building and targeted streamlined financing mechanisms; and modes of science-based implementation, including through action plans such as maritime resilience action plans and marine spatial planning. • Establishment of a dedicated regional oceanographic centre. • Implementation of measures to increase SIDS participation in sustainable commercial fisheries and provide equitable, realistic and rewarding opportunities for products from fleets and processing plants. • Stronger regional instruments or programmes on controlling land-based sources of pollution.

- Enhancement and implementation of a regime for monitoring, control and surveillance of fishing vessels to prevent, deter and eliminate illegal, unreported and unregulated (IUU) fishing.
 - Promotion and implementation of regional initiatives for sustainable conservation and management of coastal and marine resources.
 - Integration of culture into sustainable development strategies, in particular indigenous bio-cultural heritage which recognises the deep connections between people, culture, knowledge and the natural environment.
 - Greater political engagement and commitment to address the adaptation needs.
 - Elaboration of strategies for disaster risk reduction (DRR) to enhance their capacity to address disasters.
 - Strengthening of regional and national efforts in disaster risk reduction, management and coordination, including creating or strengthening insurance mechanisms.
 - Further strengthening and expanded geographic coverage of oil spill contingency plans, including increased investment and co-operation in developing integrated.
 - Establishment and strengthening of catastrophic risk insurance facilities.
 - Improved land management with respect to agriculture, watersheds, urban expansion and other detrimental impacts, as a means of reducing land-based pollution.
 - Promotion of sustainable management of forests as well as efforts to achieve reforestation, restoration and afforestation.
 - Global action to reduce greenhouse gas emissions to keep the global average temperature well below 1.5° Celsius above pre-industrial levels.
 - Operationalisation of loss and damage framework.
 - Innovative financing tools, in particular debt for adaptation swaps, an emerging tool for addressing debts in small states/SIDS and adaptation to climate change and also nature conservation.
 - Strengthening of national governance mechanisms to promote long-term planning, with sustainable development mainstreamed into national development.
 - Shifting from capacity to institution building as an important component of international support. Institution building encourages the use of country systems and promotes the retention of knowledge in all its forms, including traditional knowledge, within a country.
 - Building of institutional mechanisms within the small states/SIDS regions, with the help of the international community, to facilitate inter- and intra-regional co-operation and collaboration among CSS/SIDS and the three SIDS regions.
- Protection and management of natural and cultural heritage
- Environmental planning
Natural hazard risk assessment and management
- Sustainable land management
- Sustainable forestry management
- Climate change
- Environmental governance issues
[national]
- Environmental governance issues
[regional and inter- and intra-regional]

(continued)

Table 4.6 (continued)

Building blocks for the management of environmental resources and services	Indicative priority areas for policy intervention
Environmental governance-issues [international and regional levels]	• The full and equitable integration of small states/SIDS in the new UN institutional architecture that is emerging following the Rio+20 outcomes, including the High Level Political Forum on Sustainable Development, ECOSOC, the United Nations Environment Programme, Sustainable Development Goals, the Technology Mechanism, the Sustainable Development report and the Sustainable Financing Mechanism. • Strengthening of institutional frameworks of entities comprising the UN system, in order to increase effectiveness and efficiency in fulfilment of their functions and mandates in providing more coherent support to SIDS, while ensuring appropriate accountability. • Enhancing the voice and participation of small states/SIDS in norm-setting and decision-making at the global level, including the G20. • Urgent review of the mandates and operational functioning of UN agencies providing support to SIDS in particular • UN entities to build institutionalised support to small states/SIDS into their programmes and undertake activities that are responsive to the needs of small states/SIDS – <i>as articulated by small states/SIDS</i>.
Environmental governance [financial]	• Innovative financing tools, in particular debt for adaptation swaps, an emerging tool for addressing debts in small states/SIDS and, adaptation to climate change and also nature conservation. • Provision of financing to relevant regional financing mechanisms, including the capitalization of the Caribbean sustainability fund. • Establishment of a dedicated mechanism to provide financing to developing countries, in keeping with the ongoing Rio+20 follow-up processes, in order to develop specific projects on sustainable development. • Early operationalisation of the Green Climate Fund and urging of developed countries to scale up finance to reach US\$100 billion by 2020.

Chapter 5

Strengthening Social Cohesion in the Context of Resilience Building in Small States With Reference to Commonwealth Small States

Dr Godfrey St Bernard

5.1 Introduction

Small states face elevated vulnerability risks, which have been attributed principally to exposure to adverse economic shocks and susceptibility to natural disasters and climate change. However, exposure to a range of social forces is just as critical. Social forces originate from social systems such as regulatory systems, familial systems, communications systems, systems impacting human capital accumulation, systems impacting the accumulation of wealth, legal systems, and systems impacting culture and values. All of these systems act independently and collectively to produce outcomes with both positive and negative consequences, but, to the extent that the latter outstrips the former, negative social forces evolve to increase vulnerability risks that are socially determined.

In the context of small states, this chapter recognises that each is exposed to differential vulnerability risks, whether economic, social, environmental or some combination of all three forms. Moreover, the chapter also recognises that such risks are likely to be increased if mechanisms focusing upon building resilience are not implemented. The study that forms the basis of this chapter is predicated on the fact that notions of vulnerability cannot be overlooked in the development discourse, as is the case when one considers assessments of development in the context of frameworks such as the Human Development Index (HDI), which is devoid of such considerations. In addressing notions of vulnerability in small states, Briguglio et al. (2006) emphasised the importance of gauging and understanding resilience levels in such states.

This chapter specifically addresses these issues from the standpoint of the social aspects of resilience. Resilience building, including social cohesion, is instrumental in facilitating social development initiatives in small states. Accordingly, pushes towards social development hinge upon the pursuit of policies that foster social cohesion and, by extension, social resilience building. Building resilience is deemed to be an antidote to vulnerability risks that have their origins in the breakdown of societies in small states, due principally to their inability to withstand the negative effects of domestic and international shocks. Such shocks are not always sudden, but can be gradual. Vulnerability that is due to the inability to respond to stimuli that have evolved through gradual processes of change has not been regularly articulated in many of the discourses that give primacy to external shocks (which are often sudden). This is principally because of the omission of the social forces that

are manifest in processes of social change, which often occurs at a slower pace than change predicated on economic and environmental forces.

The estimation of key parameters describing population characteristics pertaining to attributes of individuals, and collectivities of individuals such as households, institutions and nations as entities, permits the generation of indicators that are indicative of material well-being and access to opportunities among such populations. Social development, in the context of the aforementioned units, hinges upon gauging social aspects of resilience that encapsulate social cohesion. Thus, beyond permitting observations that reflect improvements in status and condition for any given unit of analysis, other observations strive to reflect reductions in inequalities across different subgroups and reinforce pushes towards a more just exposure to conditions and opportunities through reductions in inequities.

This chapter is primarily focused upon combating the inherent vulnerability exposure of small states, through strengthening the social aspects of resilience and advocating policies that could feature meaningfully in achieving that goal. To this end, the chapter seeks to identify the social aspects of resilience building. Such aspects are connected to domains of policy interest that collectively permit the derivation of appropriate policy agendas, and hence the identification of relevant variables and suitable indicators that capture the social aspects of resilience. Using a set of proposed population clusters that reflect the medium-term socio-demographic characteristics and dynamics of 31 Commonwealth small states, the author determines and recommends different policy agendas.

5.2 Contextualising small states

Small states are deemed to have high levels of vulnerability due to their physical land area, small population size, inability to diversify national production and geographic location, with some states either being landlocked or dispersed across vast oceans. Many small states are islands of various sizes, while others are nation states, also of various sizes, located within continental domains – principally in Africa, Asia and the Americas.

In its assessment of vulnerability, the Commonwealth Secretariat (1985) defined small states as having population sizes of around one million or less. Principally because of increases in population size with the passage of time, revised population size thresholds have been established, increasing from 1 million to 1.5 million. It has been noted that population size has been seen a principal criterion for labelling a state as a small state, insofar as there is evidence consistent with a high correlation between population size, physical land area and the size of the economy (Commonwealth Secretariat 1997).

Small population size, small land area and challenges emanating as a result of topographic and maritime characteristics mix and combine in complex ways to place limitations on the capacity of many small states to produce and consume goods and services in accordance with market forces that are efficient, competitive and capable of sustaining the well-being of individuals and institutions. For small states, such

outcomes exacerbate the vulnerability risks they face. Further, such outcomes not only reinforce the urgent requirement of building resilience as a means of preventing the ills that are likely to accrue from innate characteristics of small states; they also promote favourable response mechanisms that fortify individuals and institutions against stimuli that have exposed their vulnerability and, at the same time, facilitate building capabilities and capacities that reduce response times for recovery after being exposed.

Size and geography are identified as two major challenges that intensify vulnerability risks. Size manifests itself in terms of vulnerability to economic shocks; for example, income vulnerability, limited capacity to produce and consume, and difficulty accessing external capital. On the other hand, geography manifests itself in terms of reinforcing limited competitiveness and susceptibility to natural disasters and climate change. In this context, the complexity of vulnerability as a phenomenon of interest is showcased, especially with respect to its multifaceted nature. This is more than a combination of the main effects of vulnerabilities, classified as economic, social and environmental; it also arising from their respective interactions. For each class of vulnerability, each small state is exposed to differential levels of degradation and destruction due to exposure to harmful forces that pose threats to the status quo, rendering individuals and institutions incapable of counteracting such threats. To this end, efforts towards building resilience have to focus upon individuals and institutions, introducing a dynamic model inasmuch as individuals shape institutions over and beyond innate institutional characteristics that build resilience within institutions. At the same time, individuals are shaped and moulded by institutions over and beyond their own set of individual characteristics, which evolve independent of institutions.

Sutton and Payne (1993) cite five characteristics of small states. These are openness, insularity/enclaveness, resilience, weakness and dependence. They see these characteristics and their diverse manifestations as having both positive and negative effects in the evolution of states. These are latent characteristics that are fairly common to all small states, exposing them to high vulnerability risks irrespective of land area, population size and income. The Commonwealth Secretariat (1997) recognises these five characteristics as being critical and has elaborated on their respective impacts, whether in the context of intensifying or limiting vulnerability exposure in small states.

With respect to openness, for example, the Commonwealth Secretariat (1997) makes reference to negative consequences such as those fostering foreign cultural penetration, the erosion of cultural/value systems and a propensity to migrate. In terms of positive consequences, the Commonwealth Secretariat (1997) notes that openness may actually arouse entrepreneurial and competitive interests. With respect to insularity and enclaveness, the Commonwealth Secretariat (1997) reinforces notions of remoteness, and susceptibility to the effects of natural disasters and climate change. Remoteness is deemed to be synonymous with extraordinary economic and administrative costs, which intensify the burden of sustaining livelihoods. It is also deemed important in connecting its citizens to space and reinforcing attitudes that are resistant to co-operative ventures. On the positive side, insularity is considered

central to the pleasant ambience that enables tourism industries to thrive and present viable opportunities to the residents in small island states.

Notwithstanding the high vulnerability risks that feature in small states, the Commonwealth Secretariat (1997) acknowledges the fact that many of these states are also characterised by high levels of political stability, with fewer exhibiting high levels of human capability, as gauged through the Human Development Index. These observations are indicative of the high levels of social cohesion that may already be characteristic of many of these small states, and augur well for their high levels of resilience – these in turn consistent with evidence from the vulnerability–resilience framework (Briguglio et al. 2006). As a characteristic of small states, ‘weakness’ is a function of the inability of such states to wield power and authority on a global stage. In fact, power and authority in such settings are most likely to be attained through integration movements that are, in some senses, inimical to the insular tendencies of these states. Finally, the notion of dependence is linked to weakness and is reflected in small states’ reliance on arrangements such as preferential treatment for exports, overseas development assistance, and employment opportunities through labour migration and injections into their domestic economies through remittances. However, Chand (2006) argues that international labour migration may in fact contribute towards building resilience in microstates.

5.3 Reconciling vulnerability and social resilience

5.3.1 Contextualising vulnerability and sustainable development

According to St Bernard (2007), ‘the evolution of development studies has been characterised by increasing interest in the vulnerability status of social entities whether they assume the form of individuals, groups of individuals, communities, regions or nations’. In his work on social vulnerability, St Bernard (2007) emphasised the importance of understanding social sustainability insofar as he deemed social vulnerability to be the converse of social sustainability – a concept that has featured in the work of Lele (1991), Chambers and Conway (1991) and Barbier (1987). In essence all social systems, whether they be nation states, regions, communities or households, are exposed to a gross vulnerability which is the sum total of all vulnerability risks in the absence of any resilience capabilities. However, understanding and measuring vulnerability hinge upon determining levels of net vulnerability, after taking into account resilience capabilities that are partially influenced by cohesive mechanisms and – in the case of social systems – those mechanism that are tantamount to social cohesion.

Social sustainability is a function of resilience that encapsulates social cohesion, but there has to be a focus on the capacity to sustain social systems across time, and especially inter-generationally, introducing a dynamic dimension to an analytical framework that embraces future sensibilities. In dealing with social sustainability, Lele (1991) focuses upon the ability of a social entity to sustain the social basis of human life. Chambers and Conway (1991, 25) define a livelihood as ‘a means of living and the capabilities, assets and activities required for it’. They define social sustainability

as ‘the ability of a human unit (individual, household or family) to cope with and recover from stresses and shocks, to adapt to and exploit changes in its physical, social and economic environment, and to maintain and enhance capabilities for future generations’ (Chambers and Conway 1991, 26). Barbier (1987), on the other hand, notes that social sustainability is an implicit dimension in gauging sustainable economic development and argues that strategies to promote such development should be ‘consistent with social values and institutions, and encourage “grassroots” participation in the development process’ (Barbier 1987, 109).

Understanding and measuring vulnerability has become a significant goal in the development literature, because pushes towards the attainment of sustainable development have been handicapped by inherent shortcomings in gauging vulnerability. Sustainable development encompasses different dimensions reflecting economic, political, environmental, social and cultural domains. It thrives on notions of development as sustainable insofar as they are economically viable, politically feasible, environmentally responsible and socially and culturally acceptable. Likewise vulnerability, whether gross or net, is conceived in accordance with similar domains. Thus, the determination of net vulnerability hinges upon resilience and cohesion as attributes that can be understood and measured in accordance with similar domains. Having established relationships between sustainable development, vulnerability, resilience and cohesion, and having identified their disparate domains, the complexity of such relationships becomes manifest as both main and interaction effects have to be entertained in the quest to understand and measure.

This study focuses specifically on the sociocultural dimensions, leaving the economic, environmental and political dimensions as matters to be pursued by specialists in those respective fields. The study focuses on small states as holistic systems, to the extent that vulnerability risks can be assessed in the context of the magnitude of the disintegration within such systems due to domestic and international shocks that are sudden or gradual changes. Gradual changes associated with human beings, as individuals or as collectivities, and with institutions are manifest in attitudes, expectations, roles, relationships, responses and behaviour, and are associated with anomie and outcomes such as acculturation¹ and enculturation.² Sudden changes are likely to be the result of external forces that can be economic, as in the case of a crash in financial markets; environmental, as in the case of episodes such as hurricanes, catastrophic earthquakes and volcanic eruptions; and social, as in the case of industrial unrest and political instability. Gradual changes, in contrast, may be due to economic forces associated with routine inflationary processes; and cultural forces, as in the case of changing norms and value systems that precipitate anomie in societies or the impact of the media and ICT on acculturation or enculturation.

A similar representation of vulnerability is evident in Moser (1996). She reckons that the threats that increase vulnerability exposure, whether in the context of individuals, households or communities, can be ecological, economic, social and political; and in each category, classified as sudden shocks, whether long term or seasonal. Moser (1996) reinforces notions of resilience by making reference to vulnerability as a function – not only of the threats to resisting, but also of the threats to recovering

in response to the negative effects associated with the different categories of threats. She notes that in the establishment of any index of vulnerability there ought to be focus upon the extent to which intrinsic assets render individuals, households and communities incapable of resisting or recovering from the threats associated with sudden shocks, whether long term or seasonal.

5.3.2 The essence of resilience

This chapter is specifically directed towards building aspects of social resilience to counteract inherent vulnerability exposure, referred to as gross vulnerability in an earlier section of this paper. The social aspects of resilience can be deemed to be the social development component of the resilience factor that is represented in the vulnerability–resilience framework articulated by Briguglio et al. (2006). The resilience factor is a function of the impact of policy measures that have resulted in economic stability, market flexibility, social development and good governance. Briguglio et al. (2006) make reference to inherent economic vulnerability, which is a function of trade openness, export concentration and dependence on strategic imports. While the resilience factor is indicative of a small state's coping ability due to policy-induced measures that enable it to withstand external shocks, inherent economic vulnerability is indicative of overall economic vulnerability exposure to external shocks. In essence, inherent economic vulnerability is viewed as adding to vulnerability risks while the resilience factor reduces such risks. At any given point in time, actual vulnerability risk is the net effect of overall vulnerability exposure and the resilience factor.

The vulnerability–resilience framework permits the classification of states into four clusters: a best-case scenario (low inherent economic vulnerability and high resilience), a worst-case scenario (high inherent economic vulnerability and low resilience), self-made states (high inherent economic vulnerability and high resilience) and prodigal-son states (low inherent economic vulnerability and low resilience). The ultimate aim in building resilience is to enable the worst-case states to join the ranks of the self-made states and to prevent self-made states from slipping into being worst-case states. Alternatively, resilience efforts also assist states classified as prodigal sons in becoming best-case states and prevent best-case states from slipping into the ranks of prodigal-son states.

Of 29 Commonwealth small states, Table 5.1 shows that 17 have been classified as self-made states, 10 as borderline worst-case states and 2 as prodigal-son states, in accordance with the vulnerability–resilience framework established by Briguglio et al. (2006). Altogether, 14 states need to adopt policy-induced measures that would strengthen their capabilities towards being much more effective in withstanding external shocks. The remaining 17 states have to sustain intervention measures that will enable them to continue strengthening resilience capabilities in the future, rather than becoming complacent, weakening such capabilities and increasing vulnerability risks.

The social aspects of resilience are not only about more favourable characteristics associated with the attributes of individuals, households, communities, nations

Table 5.1 Commonwealth small states by population cluster according to vulnerability–resilience framework

Classification	Worst-case states	Self-made states	Prodigal-son states
High growth-momentum populations	Kiribati Solomon Islands Papua New Guinea Maldives	Belize Vanuatu	Namibia
Quasi-stationary ageing populations	St Vincent and the Grenadines Guyana Seychelles	St Lucia St Kitts and Nevis Barbados Brunei Darussalem Cyprus Malta Mauritius Samoa Tonga	—
Moderate growth-momentum populations	—	Antigua and Barbuda The Bahamas Fiji	—
Ageing populations with high potential for declining size	Jamaica Grenada	Trinidad and Tobago Dominica	—
Moderate growth in high-mortality populations	Lesotho	Botswana	Swaziland

and regions. They are also about more favourable characteristics associated with institutional entities that are shaped by individuals, households, communities, nations and regions, and that are impacted by the lived experience of individuals, households, communities, nations and regions; hence the social aspects of resilience are also about interactions between units, lived experiences of the units and institutional entities. Conceptually, the latter approximates a dynamic process with interdependent temporal connections that are difficult if not impossible to model statistically. Nonetheless, enhanced levels of resilience are critical insofar as they fulfil the role of softening the adverse impact of sudden shocks, or for that matter any other set of factors that are otherwise likely to precipitate vulnerability risks.

Moser (1996) provides a platform for operationalising the social aspects of resilience, claiming that vulnerability is linked to asset ownership – so that a greater proliferation of favourable assets is associated with lower vulnerability risks. She identifies these assets as human capital, productive assets, household relations and social capital. She also makes reference to the intra-household factors including gender-based differentials in household decision-making, their potential contribution to strengthening resilience and their impact on inherent vulnerability exposure within households. This is relevant in the context of social cohesion, which

is in fact culturally determined for different ways across households, communities, nations and regions.

In some household settings, the persistence of traditional gender relations is likely to be due to a collective consciousness that contributes to sustaining order, harmony and happiness for its members. A similar set of outcomes is also likely to prevail in some household settings characterised by a persistence of egalitarian gender-relations, due to members embracing a collective consciousness. Such outcomes may reinforce levels of happiness among members in such settings, a happiness that is deemed to be individual-specific and critical in the thrust towards sustaining social networks that impact manifestations of social cohesion in a positive way. These ideas are consistent with the thought processes informed by the works of Dwyer and Bruce (1988), Haddad and Kanbur (1989), Sen (1990) and the World Bank (1993).

In the context of geographic regions within any given member state, differences in the manifestation of social cohesion as a result of cultural differences reinforce the importance of examining whether similar differences persist in each of the geographic regions. In member states where the differences are similar, pushes toward the attainment of social cohesion are not likely to be as challenging as in member states where there is variation in the manifestation of cultural differences from one geographic region to another. Thus, it is important to examine patterns of variation predicated on culture within each geographical region within member states, as a prerequisite for making decisions about implementing intervention measures to build resilience on the basis of a collective consciousness. Failure to pursue such a strategy may result in the implementation of intervention measures that might not build social cohesion in geographic regions where the consciousness of the population is not consistent with that which prevails for the member state as a whole.

5.3.3 Social cohesion: an imperative for building resilience

Berger-Schmitt (2000, 28) states that 'although social cohesion represents a societal quality it affects the individual quality of life because the elements of social cohesion are perceived and experienced by members of the society'. Social cohesion is therefore integral to promoting a more favourable quality of life for individuals by first of all contributing towards building their resilience capabilities. Berger-Schmitt (2000) cites two principal goals that are associated with notions of attaining greater levels of social cohesion. The first hinges upon reducing disparities, inequalities and social exclusion. These can be operationalised in the context of analytical frameworks that demonstrate the thrust towards greater equality and greater equity pertaining to accessing conditions and opportunities. The second hinges upon strengthening social relations, interactions and ties between individuals, between networks, and between networks and individuals, with all such relationships contributing to facilitate individuals' attitudes and behaviours about sustaining group membership.

While the first deals with social cohesion in the context of pushes towards overcoming disparities, inequalities and exclusion across social groups, the second deals with social cohesion from the standpoint of social capital formation, whether in formal or informal settings. Thus, social capital formation can be investigated further on the basis of data that reflect public participation of individuals in formal and informal organisations, and their identification with specific social networks – for example, family, co-workers and friends – with respect to winning approval and building trust. Altogether, social cohesion is based on a number of aspects that reflect ‘strength of social relations, shared values and communities of interpretation, feelings of a common identity and a sense of belonging to the same community, trust among societal members, as well as the extent of inequality and disparities (Wooley 1998; Jenson 1998b, as cited in Berger-Schmitt 2000, 3).

These thoughts are consistent with ideas articulated by Springer (2006) and reinforce the notion that social cohesion thrives on the attainment of levels of homogeneity with regard to the human condition and access to opportunities that elevate the status of humankind. It becomes manifest when such homogeneity transcends different social groups, enhancing greater material well-being, attaining greater levels of equality and promoting options that facilitate greater equity and justice. The OECD (2011) in its report entitled *Perspectives on Global Development 2012: Social Cohesion in a Shifting World* makes reference to three different dimensions of social cohesion: social inclusion, social capital and social mobility. Additionally, the OECD (2011) notes that social cohesion is critical to long-term economic development and that the persistence of social inequalities, exclusion and ‘voicelessness’ are inimical to sustainable processes. Some of the policy domains for which recommendations have been proffered by OECD (2011) include fiscal tax design, employment, social protection, civic participation, education, gender and migration.

Friedkin (2004) acknowledges the complex nature of social cohesion as a concept, noting that the vast literature has spawned numerous definitions that are difficult to reconcile. Friedkin (2004) cites several studies (Bollen and Hoyle 1990; Drescher et al. 1985; Evans and Jarvis 1980; Hagstrom and Selvin 1965; Mudrack 1989; Piper et al. 1983) and notes that analyses of social cohesion have characterised it as a multidimensional concept or as a latent construct. He states that social cohesion is characterised by a set of processes that involve reciprocal connections between attributes at the individual and group levels and recognises that such processes pose tremendous challenges for statistical analysis. According to Friedkin (2004, 410), ‘groups are cohesive when group-level conditions are producing positive membership attitudes and behaviours and when group members’ interpersonal interactions are operating to maintain these group-level conditions’. In examining membership attitudes and behaviours that are indicative of social cohesion, Friedkin (2004) makes reference to different individual-level indicators that permit inferences about different aspects of individuals’ attraction or attachment to groups.

In order to better explain the processes involved in shaping individuals' attitudes and behaviour in the context of their pushes towards sustaining group membership, Friedkin (2004) alludes to three critical challenges. First, there is a need to embrace appropriate theoretical frameworks explaining group membership attitudes and behaviours, and provide descriptive accounts of the distribution of group members' attitudes and behaviours pertaining to 'belongingness' in their groups. Second, there must be a link between social processes in different networks and the attitudes and behaviours of individuals towards their respective social groups. Third, there ought to be a systemic connection between the different networks and the dynamics of group conditions that influences the perception of members about their tenure within groups. Collectively, overcoming these three challenges is deemed to be critical in operationalising the formation of social capital as a dimension of social cohesion.

In evaluating efforts toward the attainment of social cohesion based upon reducing inequalities and inequities, analytical frameworks operate on three levels. The first recognises individuals as being naturally segregated on the basis of attributes such as geographic location, ethnicity, sex, age, religion, nativity, disability status and wealth status, to name a few. These are considered to be first-level variables and thus deemed to be exogenous. As human characteristics vary across each of these attributes, natural and cultural differences persist in much the same way across time and may harbour instinctive differences that are real, virtually impossible to erase, and not amenable to the smallest prospect of compromise. In societies where such tendencies persist, there is ethnic and religious segregation, and this is even more pronounced when the basis of segregation is predicated upon interactions between two or more of these attributes. In such societies, there could be little or no room for social cohesion, as is the case in countries where racial and religious tensions have brought strife and anarchy to the fore and have heightened vulnerability risks to a maximum.

Notwithstanding such natural and sometimes cultural differences, some level of social cohesion can still be attained in spite of the natural and cultural diversity of some societies. This is because policy prescriptions target second-level attributes that are the outcome variables used to determine variations in resilience capacities and capabilities. These attributes are linked to performance measures related to education; economic activity; health; knowledge, attitudes and practice in the context of HIV/AIDS; fertility outcomes; public participation; wealth accumulation; the use of ICT; social protection; and public order and public safety. For any given performance measure pertaining to a second-level attribute, the closer the observed measures are in spite of variation in the characteristics of the first-level attributes, the greater the push towards social cohesion predicated on the notion of reductions in inequality of condition or access to opportunity across naturally or culturally diverse sets of individuals.

By way of illustration, suppose 35 per cent of the population of Small State A had access to health insurance coverage in 1990, with respective proportions among poor and non-poor persons being 6 per cent and 45 per cent. In 2010, the corresponding proportions increased to 45 per cent, 20 per cent and 55 per cent. Not only has there

been greater access to opportunity with respect to health insurance coverage over the 20-year period, there has also been a push toward greater equality with regard to opportunities for accessing health insurance coverage (a second-level attribute) across two social groups reflecting differences in wealth status (a first-level attribute). In essence, intervention measures may have been associated with such an outcome during the intervening years, removing some of the barriers that permit exclusion between the two groups. Beyond assessing the thrust towards greater equality, one can also assess pushes towards greater equity by computing concentration ratios such as Gini Indexes.

The third set of attributes are tantamount to control variables that are used to determine whether observed patterns of relationships between first-level and second-level variables persist or vary dependent on differences that are characteristic of the third level attribute. In the previous illustration, a control variable might be municipal area. Assuming that there are four disparate municipal areas in Small State A, a highly desirable outcome will be the recurrence in each of the four municipal areas of a pattern that is consistent with that which had occurred for Small State A prior to taking municipal area into account. In other words, one can conclude that, in each of the municipal areas, intervention measures can be associated with the observation of greater equality across the 20-year period.

In sum, this analytical framework is built upon a temporal analysis of outcomes on key performance measures that constitute mechanisms towards gauging improvements in material well-being within social groups, and greater equality across social groups, through the use of rates, proportions, ratios and summary measures such as means and medians. Ultimately, temporal analyses of Gini Indexes and Concentration Ratios permit further assessments of pushes towards greater equity.

5.4 Measuring social aspects of resilience

5.4.1 Determining policy domains to inform social aspects of resilience

Adequate coverage of the social aspects of resilience constitutes the full extent of capabilities assigned to societies as social systems. Such coverage contributes towards fortifying units such as individuals, households, communities, municipal areas, nations and regional blocs to the extent that vulnerability risks due to exposure to domestic or external forces are reduced. Implicitly, input data that throw light on the social aspects of resilience should be collected targeting attributes that pertain to the character of individuals and institutions and be indicative of variable outcomes that can be classified as being more favourable or less favourable. Institutional entities such as the public sector, the private sector, non-governmental organisations, community-based organisations, faith-based organisations and international organisations, together with individuals, are the principal agents of action with respect to the delivery of intervention measures that are established in accordance with policy agendas. Moreover, formal and informal networks mix and combine with individuals and institutions to influence the efficacy of service delivery to empower individuals, institutions and social systems and build resilience.

The individual constitutes the lowest level of data collection for the purpose of developing indicators that make it potentially possible to obtain indicators at higher levels of analysis. Moreover, data collection at the lowest level is important in developing analytical frameworks that hinge upon the ability to establish control using non-experimental data. The latter is critically important at the stage of policy prescription, insofar as policy agendas that appear to be feasible at a higher level may not necessarily be feasible in dealing with the needs of units such as individuals and other potential beneficiaries at lower levels. For example, the collection of data pertaining to different but related characteristics in each of the geographical regions within any given member state will not inform policy prescriptions targeting individuals and households in such a member state. However, the collection of data pertaining to a representative sample of individuals in households will permit further analyses that inform policy prescriptions targeting households and geographic regions within such member states.

Goodwin (2003) identifies five kinds³ of capital deemed critical to sustainable economic production: financial, natural, produced, human and social capital. Though social development hinges upon all forms of capital, it more directly relies upon capital that is classified as financial, human and social, which collectively consume natural capital and, in addition to consuming produced capital, also produce it.

Social aspects of resilience therefore focus on those attributes that relate to financial, human and social forms of capital. Building and strengthening the social aspects of resilience focus upon establishing policy prescriptions and charting policy agendas consistent with such aspects. For example, agendas associated with wealth creation relate to strengthening social aspects of resilience impacting financial capital, while agendas associated with exposure to education, access to healthcare, and knowledge, attitudes and practices in the context of HIV/AIDS relate specifically to strengthening social aspects of resilience impacting human capital. Exposure to education is also contingent upon being healthy, which is a function of adequate food security coverage and access to healthcare, and both exposure to education and access to healthcare impact an individual's engagement in economic activity, with all three domains impacting the accumulation of wealth. Other related domains such as the use of ICT, social protection and fertility are associated with all of the aforementioned. Policy agendas impacting social protection also impact social aspects of resilience pertaining to public order and public safety.

Social capital contributes to social development and strengthening the social aspects of resilience through strengthening social cohesion. To this end, policy agendas dealing with public participation are necessary, and at the same time have to be supported by other policy agendas with associated targets tantamount to reductions in inequalities, inequities and exclusion. Such agendas can be advocated in each of the aforementioned domains and complement those akin to social cohesion that strengthen social aspects such as trust, shared values, belongingness and solidarity in the context of public participation. Whether in the context of financial, human or social capital, the social aspects of resilience are to be captured at the level of the individual to permit the generation of observations at the individual level. Although

reference has been made to data collection with regard to units representing institutional organs, methodological limitations preclude such data collection. With respect to Commonwealth small states, ten domains are proposed and will inform the derivation of indicators that permit efforts to gauge the strengthening of resilience-building capabilities among individuals as the primary beneficiaries.

5.4.2 Determining variables reflecting the social aspects of resilience

Having proposed ten policy domains that will inform prospective policy agendas for building social aspects of resilience in Commonwealth small states, Table 5.2 lists a number of variables that can be observed among individuals in accordance with relevant indicators. A small number of variables have been listed to reflect observations that can be easily obtained and considered to be valid for the purposes of evaluating outcome. Additionally, the listed variables can be observed directly in keeping with standard operationalisation procedures used in routine national sample surveys. For each of the listed variables, potential data sources, target populations and control variables can be determined. Apart from obtaining appropriate estimates for specific parameters of interest in gauging social aspects of resilience for each Commonwealth small state, further estimates can also be obtained to reflect differences in parameter estimates across different sub-populations of interest.

Table 5.3 shows that the ten policy domains rely on data from nine different sources. The reliance on data is variable dependent on the source. Living standards measurement surveys (LSMS) can potentially be used to collect the requisite data within each of the policy domains. Labour force surveys (LFS) only permit the collection of data pertaining to economic activity and ought to be one of the more routine data collection exercises of national statistical offices. The multiple indicator cluster survey (MICS) is spearheaded by UNICEF and permits data collection pertaining to knowledge, attitudes and practices with respect to HIV/AIDS; fertility; and access to healthcare. Several Commonwealth small states have conducted MICS under the auspices of UNICEF. Insofar as the MICS strives to facilitate institutional strengthening in such states, prospects are good for building capabilities to continue collecting such data nationally, provided that the political and technical will remain alive.

Fewer domains rely on data collected from other sources such as decennial population census-taking, sexual and reproductive health surveys (SRHS), national victimisation surveys (NVS), national literacy surveys (NLS) and administrative data sources such as the police and the International Telecommunications Union (ITU). Nonetheless, NVS, NLS and SRHS are critical in enhancing prospects for collecting valid data pertaining to crime victimisation rates, literacy, and sexual and reproductive health (including HIV/AIDS and fertility outcomes). In many small states, constraints predicated upon the availability of financial constraints and innate technical capabilities inhibit prospects for such surveys to be considered despite their importance. It should be noted, however, that these surveys are not expected to be annual, but rather can be rotated biennially and each repeated every five years as a means of achieving some measure of efficiency. Decennial census-taking and administrative data from the police and the ITU constitute routine data collection

Table 5.2 Principal dependent variables by policy domain

Policy domain	Principal dependent variable
Exposure to education	Adult literacy Early childhood care and education Successful completion of secondary education Successful completion of tertiary education
Access to health treatment	Access to health insurance coverage Visit to health institution Visit to medical doctor Exposure to stressors Postnatal care of infants Child health Child nutrition
HIV/AIDS	Knowledge of HIV/AIDS prevention Attitudes toward discrimination Risky sex behaviour
Female fertility ⁴	Children ever born alive Ideal family size
Public order/public safety	Victim of violent crime Victim of intra-familial violence Use of dangerous substances (including alcohol and tobacco)
Accumulation of wealth	Entrepreneurial starts Business failure Access to credit Income/expenditure Poverty status
ICT	Internet usage Television viewing Listening to radio
Economic activity	Unemployed status Participation in the labour force Self-employment status Employed in agriculture Employed in unskilled labour Employed in skilled labour Employed in professional work Employed in decent work
Public participation	Civic engagement Civic participation Political participation Political voice
Social protection	Receipt of benefits – education, medical, unemployment, housing, meals Receipt of pension Receipt of remittances Receipt of counselling services – medical and/or social problems

Table 5.3 Locating data collection sources

Domains	LSMS	LFS	MICS	SRHS	NVS	NLS	Pop Cen	Police	ITU
Education	X					X	X		
Healthcare	X		X						
Economic activity		X							
Wealth accumulation	X								
Social protection	X								
Public participation	X								
HIV/AIDS			X	X					
ICT	X								X
Fertility	X		X	X			X		
Public order/safety					X			X	

Note: LSMS - Living Standards Measurement Surveys, LFS - Labour Force Surveys, MICS - Multiple Indicator Cluster Surveys, SRHS - Sexual and Reproductive Health Surveys, NVS - National Victimization Surveys, NLS - National Literacy Surveys, Pop. Cen - Population Census, ITU - International Telecommunications Union

exercises that facilitate the need for data for variables pertaining to education, violent crime and ICT.

5.5 Shaping policy agendas: some preliminary considerations

Population size and age composition have implications for the thrust of future policy interventions and for building resilience. The ability of a country to respond to shocks is dependent on the process of ageing, the extent to which youth populations will continue to grow, the extent to which elderly populations and their share in overall populations will continue to grow, and whether or not overall population sizes would continue to grow or decline. Therefore, a review of population projections is a critical prerequisite for determining the prospects of future population sizes and dynamics based on current knowledge of key demographic components of population change and assumptions about their prospective changes. This is pursued in the context of 31 small states that are members of the Commonwealth and pivotal to this study, and provides heuristic insights about prospective policy prescriptions. These policy prescriptions based on changes in prospective age compositions of populations are classified in accordance with five different trajectories of population growth. Such trajectories are consistent with five population clusters that are to be presented for the purposes of this study.

The terminal year of the population projections is 2050. This is consistent with a projection horizon that is sufficiently long to permit reliable assessments of trajectories pertaining to prospective attributes of the populations of Commonwealth member states, in particular, population size and age composition. These changes have implications for the thrust of future policy interventions and their implications for building resilience dependent population dynamics that impact demographic ageing and population size. In essence, future domains for policy interventions are likely to

be similar within each of the five population clusters, bearing in mind differences that will be unique to specific member states.

It is also worth noting that past and current levels of fertility, mortality and migration inform assumptions about prospective changes in levels of fertility, mortality and migration. These in turn have implications for shaping policy prescriptions, which ought to be designed to attain desirable outcomes with respect to trends pertaining to each of the three components of population change. This study is predicated on the notion that these components – together with their implications for changes in population size, population growth rates and the age composition of populations – do influence in large measure the direct and indirect policies that should be directed towards building resilience. Such policies are realised through the implementation of formalised programmes with performance objectives that are operationalised in terms of key indicators reflecting the social aspects of resilience at the level of individuals.

5.6 Towards policy agendas: small states in the Commonwealth

5.6.1 A population perspective

Insofar as this study deals with attainment of social cohesion as a means of building resilience, the basic unit of analysis ought to be individual members of the populations of Commonwealth small states. Moreover, the philosophical outlook underlying the formulation of policy prescriptions in this study hinges upon a preventive model that recognises changing population dynamics as critical levers for implementing preventive measures that modify evolutionary processes in ways that will prevent the recurrence of past undesirable outcomes and foster the onset of outcomes that are deemed to be more desirable, thus constituting improvements – for example, greater resilience – compared with the past. In essence, the preventive model ought to elevate desired characteristics of human existence through prevention mechanisms that reduce prospects of the recurrence of less desirable characteristics of human existence.

It is therefore imperative that population projections provide heuristic insights about future population dynamics. Such dynamics should inform the focus, formulation and implementation strategies of policies and their corresponding intervention measures, which ought to be directed differentially to the same set of individuals with the passage of time. The latter is due principally as responses to changes in individuals' life stage attitudes, roles, expectations, responses, challenges, conditions and opportunities. These correspond to notions of period and cohort effects, which are often overlooked in the policy discourse but critical in the articulation of the preventive model.

In dealing with different human characteristics that are manifestations of attributes reflecting social aspects of resilience, the focus is primarily on period outcomes. Such outcomes are based on the life experiences and actions of specific cohorts of actors and impact exposure to vulnerability risks, whether individually in determining their own destiny or collectively to determine the destiny of institutions and nations.

Interestingly, the preventive model draws on future sensibilities about period outcomes pertaining to human characteristics that are manifestations of different social aspects of resilience at different time points/periods in the future. However, the beneficiaries of such outcomes will undoubtedly be emergent cohorts of players, who will have come of age to continue shaping development process in a manner that will continue reducing vulnerability risks based upon the attainment of stronger resilience capabilities.

5.6.2 Determining the population clusters

Drawing on demographic data, especially demographic projections, Commonwealth member states have been classified according to five population clusters. The projections are obtained from the databases of the United Nations Population Prospects – 2012 Revision, and are consistent with the medium assumptions for the member states under review. Data summarising ageing dynamics and the socio-economic characteristics of Commonwealth member states are also presented as a means of contextualising the discussions.

Of the 53 Commonwealth member states, this study identifies 31 as small states. The majority of these states have population sizes below 1.5 million. However, for those states that have larger population sizes, their land area or income attributes render them exposed to similar vagaries to those with population sizes below 1.5 million. The 31 member states have also been classified according to five population clusters, which have been determined on the basis of projected population growth trajectories and implications for age composition in projected populations. The typology reflecting the population clusters identified to classify member states is as follows:

- high growth-momentum populations;
- moderate growth-momentum populations;
- moderate growth in high-mortality populations;
- ageing populations with high potential for declining size; and
- quasi-stationary ageing populations.

Table 5.4 shows that the member states are drawn from five major regions, namely Africa (six member states); Asia (two member states); Europe (two member states); Latin America and the Caribbean (twelve member states); and the Pacific (nine member states).

Twenty-five (25) of the 31 member states have populations that are less than 1.5 million, which poses a number of challenges linked to the attainment of critical masses and the disadvantages of being unable to capitalise on economies of scale. The remaining six (6) member states – Jamaica, Papua New Guinea, Botswana, Namibia, Lesotho and Swaziland – have population sizes in excess of 1.5 million each, but are characterised by a number of challenges that epitomise states exposed to high inherent vulnerability exposure in the face of compromised resilience levels. In essence, these states are plagued with at least one of the following challenges:

Table 5.4 Commonwealth small states by region and population cluster

Classification	Africa	Asia	Europe	Latin America and the Caribbean	Pacific	All states
Moderate growth-momentum populations	–	–	–	2	1	3
Quasi-stationary ageing populations	2	1	2	5	3	13
High growth-momentum populations	1	1	–	1	5	8
Ageing populations with high potential for declining size	–	–	–	4	–	4
Moderate growth in high-mortality populations	3	–	–	–	–	3
Total	6	2	2	12	9	31

- dependence on a narrow range of exports;
- high transportation costs due to insularity and remoteness;
- dependence on strategic imports such as food and fuel;
- susceptibility to natural disasters;
- decline in global trade and investment;
- lack of readily available infrastructure for investors and trade partners; and/or
- limited capacity to harness growth opportunities.

The above traits reflect facets of economic and environmental vulnerabilities that result in high inherent vulnerability exposure in each of the seven member states.

5.6.3 Characteristic features and policy agendas of the population clusters

The five population clusters constitute a platform for gauging prospective changes with respect to critical demographic and socio-economic attributes that are integral to initiatives for attaining greater levels of social cohesion and, especially, strengthening social attributes of resilience. From the standpoint of population dynamics, ageing dynamics and socioeconomic character, each of the five population clusters reflects clear and unique trajectories for informing policy agendas to positively impact the attainment of social cohesion and, by extension, stronger resilience capabilities. Table 5.5 provides a classification of the member states according to the five population clusters.

Table 5.5 Commonwealth small states by population cluster

Classification	Country examples
Moderate growth-momentum populations	Antigua and Barbuda, The Bahamas, Fiji Islands
Quasi-stationary ageing populations	Barbados, Guyana, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Samoa, Tonga, Tuvalu, Cyprus, Malta, Mauritius, Seychelles, Brunei Darussalam
High growth-momentum populations	Belize, Kiribati, Nauru, Papua New Guinea, Solomon Islands, Vanuatu, Maldives, Namibia
Ageing populations with high potential for declining size	Dominica, Grenada, Jamaica, Trinidad and Tobago
Moderate growth in high-mortality populations	Botswana, Lesotho, Swaziland

High growth-momentum populations

This cluster consists of member states from four of the five regions: Latin America and the Caribbean, the Pacific, Africa and Asia. For all of the member states, gross disparities are evident with regard to the size of their respective land areas, especially when one considers the kind of variation across Nauru, Maldives, Belize, Papua New Guinea and Namibia. The vast majority of the member states have very small populations of fewer than one million persons, exceptions being Papua New Guinea and Namibia. Though small, these populations have exhibited phenomenal increases in their sizes and are highly likely to sustain similar upward trends, with no prospect of declining population size by 2050. The large population size and phenomenal growth trajectories that are characteristic of Papua New Guinea ring alarm bells.

Within this cluster, the most favourable mortality experiences for populations have been evident in Belize, the only Caribbean member state; Vanuatu in the Pacific; and Maldives in Asia. Mortality experiences are less favourable in the four remaining Pacific member states – Kiribati, Papua New Guinea, Nauru and Solomon Islands – and in an African member state – Namibia. All of the member states have high fertility levels that are well above the replacement fertility level and are thus fuelling population growth. Despite evidence of ageing, which has become a near-universal phenomenon, the populations in all of these member states are inherently young and highly likely to be much the same way by 2025 and beyond.

Generally speaking, all of the member states can be classified as low-income states. Moreover, there appear to be noteworthy inequities in the distribution of income, especially in Namibia. With respect to internet use, all of the member states, with the exception of Nauru, are characterised by low internet use; this outcome is most striking in Papua New Guinea and Solomon Islands.

The common denominator in this cluster of member states is the extraordinary rate of population growth and persistent increase in their population sizes, and that they will continue to have predominantly young populations. Targeting the overwhelmingly large populations of children, youth and young adults is a key

strategy in setting social policy agendas that are geared towards strengthening social attributes of resilience in the future. Such populations are the engines that will sustain and build these economies and societies over the next half of a century. To this end, policy prescription and formulation should include four principal domains: exposure to quality education; access to healthcare; fertility reduction; and enhanced economic activity, including access to decent work.

Moderate growth-momentum populations

This cluster consists of three member states from two regions: Latin America and the Caribbean, and the Pacific. The three member states – Antigua and Barbuda, The Bahamas and Fiji Islands – have population sizes and physical land areas that are quite variable. In each of the three member states, populations are characterised by mortality experiences that are favourable. This is especially true for females in Antigua and Barbuda, The Bahamas and Fiji. Males, however, have less favourable experiences than females in the three member states, this being mostly so in the case of Fiji. Except for Fiji, the remaining member states have fertility levels that are at or below replacement level. Migration is the engine of moderate growth momentum in The Bahamas and Antigua and Barbuda. Ageing populations abound in each of the three member states, with the pace of ageing being slowest in Fiji. There is noteworthy variation in income levels across the three member states. There also appears to be growing internet use in each of the three member states and closure of the gap of internet use among the member states.

The populations of this cluster of member states have an in-built growth momentum that is fuelled by positive migration flows in the cases of Antigua and Barbuda and The Bahamas. Had their population fortunes been left solely to fertility and mortality dynamics, the three member states would experience much slower growth or would be threatened by declining population sizes in later decades. Given current trajectories, however, the latter does not appear to be likely by 2050. Rather, all of the populations are expected to increase by a magnitude of 1.3 between 2013 and 2050. In accordance with the vulnerability–resilience framework (Briguglio 2014), the three member states are classified as ‘self-made’ states having high inherent vulnerability exposure and high resilience. This suggests that they have had a fairly satisfactory track record with regard to building resilience in traditional domains such as education, healthcare and social protection.

Notwithstanding such achievements, novel areas for policy intervention may include the promotion of opportunities for greater public participation for youth and the elderly, and mechanisms that build social cohesion given the diverse character of populations such as those in Antigua and Barbuda and The Bahamas where differences may persist between the conditions, opportunities and experiences of migrant and native sub-populations. Reconciling such differences through policies designed to achieve greater equality and equity in policy domains, such as in the accumulation of wealth and economic activity including access to decent work, is a worthy goal for the member states in this cluster. Dealing with the threat of xenophobia in such settings is also a worthy venture to help foster social cohesion.

The promotion of greater public participation ensures that the rights and desires of young persons continue to be represented in an emergent world where they may eventually be outnumbered. In this cluster, the indicators are that greater longevity will swell the ranks of the elderly, who need to be reassured of their rights and freedom in accordance with pushes towards greater social cohesion that thrives on greater equality and greater equity prevailing irrespective of age. To this end, the elderly need to be empowered through the promotion of greater public participation.

Moderate growth in high-mortality populations

This cluster consists of three member states from the African continent: Botswana, Lesotho and Swaziland. The three member states have population sizes that are similar, ranging between one million and three million. All of the three populations are characterised by less favourable mortality experiences as a result of high child mortality and unusually high adult mortality, both due to HIV/AIDS. Fertility is also high, being well above replacement and fuelling population growth in the face of losses due to high mortality. Though youthful, the populations contain relatively large proportions of elderly persons due to the relatively high mortality in younger adult life.

There is substantial variation in income levels, with Botswana having higher income levels than in Lesotho or Swaziland. In Swaziland, there is evidence of gross inequity surrounding the distribution of income. There are also gross disparities in physical land area, with Botswana covering a much larger land area than Lesotho or Swaziland. Both Swaziland and Lesotho are landlocked – a factor which adds to their high inherent economic vulnerability exposure. Each of the three member states has a low prevalence of internet use.

The common denominator in this cluster of member states is the extraordinary rate of population growth and persistent increase in their population sizes, and that they will continue to have predominantly young populations. Not surprisingly, targeting for the purpose of setting policy agendas will have similar consequences as in the case of the ‘high growth-momentum populations,’ with the overwhelmingly large populations of children, youth and young adults being central to setting social policy agendas that are geared towards strengthening resilience capabilities in the future. For the same reasons as indicated earlier, policy prescription and formulation should include four principal domains: exposure to quality education; access to healthcare; fertility reduction; and enhanced economic activity, including access to decent work.

A second factor influencing intervention measures to be adopted is the high adult mortality due to HIV/AIDS. This hinges upon the establishment of policy prescriptions with goals seeking to reduce incidence rates for HIV, modify sexual practices, increase knowledge about HIV/AIDS and reduce discriminatory behaviour. Intervention measures associated with such policy prescriptions should target the overwhelmingly large number of adolescents and youth in the populations of the three member states in this cluster. In addressing the different goals, intervention measures should recognise differences in outcomes that prevail across domains predicated upon geographic location, wealth status and age, and hence the need to reduce inequalities

and inequities as means toward achieving greater social cohesion, while at the same time achieving more favourable outcomes for the respective populations being targeted.

In this cluster, there is evidence of aged populations, insofar as more than 7 per cent of national populations are observed to be aged 65 years or older. In Botswana, this proportion is as high as 11 per cent and points to the significance of policy prescriptions targeting access to healthcare, social protection and the promotion of greater public participation.

Ageing populations with high potential for declining size

This cluster best characterises the experience of the populations in four Caribbean member states: Dominica, Grenada, Jamaica, and Trinidad and Tobago. The two smaller states have population sizes that do not exceed 110,000 and are less likely to do so in the future. The two larger states – Jamaica and Trinidad and Tobago – have population sizes exceeding two million and one million respectively. There are also disparities in physical land area, with Jamaica and Trinidad and Tobago being substantially larger than Dominica and Grenada. Population change dynamics suggest that the sizes of these two populations will peak and begin to decline in the face of population ageing.

In all four member states, the populations are characterised by favourable mortality experiences, despite observations pointing to less favourable experiences among male populations in Trinidad and Tobago. All of the member states have low fertility levels, which are either at or below replacement level and retarding population growth. Moreover, they have all been characterised by population losses due to net migration. In all four states there is clear evidence of population ageing, resulting in markedly greater concentrations of older persons in their respective populations with the passage of time.

There are disparities in income levels across the four member states with Trinidad and Tobago having a notably higher income level than each of the other member states. In Jamaica, however, the available evidence is consistent with noteworthy inequities in the distribution of income. Internet use is more prevalent in Dominica and Trinidad and Tobago than it is in Grenada and Jamaica.

For the four member states within this cluster, population sizes are highly likely to decline well before 2050. These member states have fertility levels at or below the replacement level, are ageing rapidly and have been characterised by net losses due to migration. Additionally, the age structure of populations in these member states is changing rapidly – to the extent that persons 65 years or older will account for an increasingly larger share of the population, while persons under 15 years will account for an increasingly smaller share. Policy agendas targeting children and youth on one hand, and the elderly on the other, are critical options for these four member states. For children and youth, policies should set goals that focus on greater exposure to education at all levels; greater access to healthcare; greater food security awareness and coverage; greater levels of social protection, particularly in the context of living in

dangerous circumstances; and greater public participation. For young adults, policies should set goals focusing on greater wealth accumulation; greater participation in economic activity; greater public participation; and greater mechanisms for social protection. For the elderly, policy agendas should be directed towards greater public participation, greater social protection and greater access to healthcare.

Whether in the context of geographic region, gender, wealth status, disability status, nativity, ethnicity or other socio-economic background characteristics, policy agendas should also set goals to achieve greater equality and equity regarding the allocation of the abovementioned human needs. Through these means, policy agendas assist in satisfying the overarching goal of strengthening resilience through the attainment of greater social cohesion. Such sensibilities also prevail when one reflects upon observed trends of marked reductions in fertility at national levels, despite little or no reduction among women in lower-wealth status groups.

This is evident in member states such as Jamaica and Trinidad and Tobago, where reductions in the number of live births annually are expected during the next three decades in response to declining fertility levels. It also implies that increasingly larger proportions of children and youth are likely to be living in household settings where wealth status is compromised and this could impact negatively on their access to conditions and opportunities that can enhance their life chances. This has deleterious implications for these children and youth in the context of their transition to adulthood, their worthwhile engagement in society and the economy, and the overall competitiveness of these member states over the next three decades. For these member states, the public sector and other critical organs of civil society therefore have obligations to ensure the well-being of these youth populations, through fulfilling the mandates set by policy prescriptions designed to permit greater equality and equity with respect to exposure to quality education at all levels, social protection, access to healthcare and greater food security coverage catering to the needs of young children in lower-wealth status groups.

Quasi-stationary ageing populations

This is the largest cluster, consisting of 13 member states from all of the five regions. Most of the member states have small population sizes not exceeding 500,000, exceptions being Guyana, Cyprus and Mauritius. Population sizes have increased very slowly and, if they have not peaked, are likely to peak before beginning to decline at a slow pace. In essence, these population sizes will stay fairly static for a sustained period. For all of the states, there are gross disparities in physical land area when one compares Tuvalu, Cyprus and Guyana.

For females, favourable mortality experiences are generally evident for member states except for Guyana and Tuvalu, where less favourable mortality experiences are characteristic of females. In Seychelles, less favourable experiences were noted among males. With the exception of Guyana, the small states from Africa, Asia, Europe and the Caribbean have near replacement or below replacement fertility levels. In contrast, the three small states from the Pacific – Tonga, Samoa and Tuvalu –

have high fertility levels. All of the states in this cluster have ageing populations, although Guyana and the states in the Pacific region will continue to have very young populations.

Across the member states, there is substantial variability in income levels, the highest being in Brunei Darussalam, Cyprus, Malta and Seychelles. In Seychelles, the relevant data are indicative of noteworthy inequities in the distribution of income. Lowest-income levels persist among Pacific member states, while Caribbean member states are between the two extremes. Internet use is variable within and across the regions, with consistently higher use being evident in the two European member states (Malta and Cyprus), in Barbados and St Kitts and Nevis in the Caribbean, and in Brunei Darussalam. In contrast, low use is evident in the three member states from the Pacific region (Tonga, Samoa and Tuvalu) and the two African member states (Mauritius and Seychelles).

The sizes of the populations for this cluster of member states are relatively small and exhibit small growth for two principal reasons. For member states such as Barbados, Malta, Cyprus and Brunei Darussalam, gains from net migration have facilitated modest population growth, notwithstanding the fact that they are all characterised by below replacement fertility. For Guyana, Samoa, Tonga, Tuvalu and Seychelles, fertility levels are sustained above replacement level and fuel modest population growth – due to high net loss as a result of migration in the case of Guyana and population size dynamics in the cases of Seychelles and the three Pacific member states. For St Lucia, St Kitts and Nevis, St Vincent and the Grenadines, and Mauritius, fertility levels are at or below the replacement level to the extent that population sizes are likely to stabilise and eventually decline as ageing processes gain momentum.

This cluster contains three sets of member states that should engage policy agendas consistent with other aforementioned clusters. Member states such as Barbados, Malta, Cyprus and Brunei Darussalam should embrace policy agendas consistent with moderate growth-momentum populations. In contrast, Guyana, Samoa, Tonga, Tuvalu and Seychelles should embrace policy agendas consistent with high growth-momentum populations. The third set of member states, consisting of St Lucia, St Kitts and Nevis, St Vincent and the Grenadines, and Mauritius, should embrace policy agendas consistent with ageing populations with high potential for decline.

5.7 Summarising policy agendas and goals

For the different population clusters, a host of prescriptions have been forthcoming with respect to policy agendas targeting specific sub-populations predicated upon a preventive model for promoting social development (see Appendix 5.2). The delivery of intervention measures associated with specific policy agendas is likely to be the responsibility of a host of stakeholder groups including the public sector, the private sector, non-government organisations, community-based organisations, faith-based organisations and international organisations, each channelling their efforts through a host of social institutions including the family, the education system, communication systems, regulatory systems, legal systems, systems for resource

allocation, and cultural and value systems to reach beneficiaries at the individual level. Of course, the impact of their interventions is a function of the robustness and innate resilience that shape the character of stakeholders and social institutions, provided that the will, the appropriate resources and the technology are also all available to create the desired impact on beneficiaries.

As far as possible, techniques akin to process evaluation provide bases for undertaking feasible intervention strategies, and, to the extent that such intervention strategies are pursued in accordance with appropriate standards for monitoring outcomes and evaluating impact, the desired impact can become manifest among beneficiaries. Advancing social development through strengthening social aspects of resilience also impacts stakeholder groups and social institutions positively, insofar as the beneficiaries are also the primary actors among stakeholders and within social institutions. Within the various population clusters, beneficiaries in the respective member states are drawn from children, youth, young adults and the elderly in the main. Some are also classified according to their nativity status, wealth status, sex, geographic region or other background socio-economic characteristic in order to further advance efforts to strengthen resilience capabilities through the attainment of greater social cohesion.

With respect to domains pertaining to education, healthcare and economic activity, goals should be established to ensure that national-level magnitudes are indicative of more favourable conditions, experiences, opportunities, responses and orientations, among other desired characteristics of key national attributes. In addition, within the context of outcomes at sub-national levels or at the level of sub-populations, there should be evidence of the attainment of greater equality and greater equity with regard to the allocation of conditions, experiences, opportunities, responses and orientations, among other desired characteristics due to designated intervention measures.

From the standpoint of children's well-being, health, education and nutrition are critical factors influencing variations in status. In fact, children's educational characteristics are often predicated upon their health and nutrition, both of which are functions of background characteristics such as the wealth status of their households. The attainment of more favourable educational characteristics is positively associated with human attributes in later stages of their lives. These attributes include orientations towards public participation, internet usage, economic activity and the accumulation of wealth. In contrast, sub-populations of women with less favourable educational characteristics are more likely to have higher lifetime fertility and a greater reliance on social protection to cover the human needs of their children. In member states that have losses due to net migration, remittances become a critical means through which social protection can fill the void created by the inability of other stakeholder groups to compensate for the absence of material resources to meet the needs of children living in difficult circumstances.

For adolescents, youth and young adults, a different configuration of policy options prevails, with policy agendas specifically targeting HIV/AIDS as a domain of interest for intervention. Though this was specifically featured in the context of 'moderate growth in high-mortality populations,' it may have some relevance in the context

of country-specific requirements of member states belonging to the remaining four clusters. In such cases, intervention measures should seek to positively modify attitudes and behaviours that precipitate risky sexual behaviours among adolescents, youth and young adults. Moreover, pushes towards expanding awareness of and knowledge about HIV/AIDS and promoting more positive attitudes that would reduce discriminatory behaviour are also deemed to be appropriate intervention measures.

Youth and young adults also stand to benefit from exposure to intervention measures designed to increase exposure to adult literacy programmes and proportions of youth completing secondary and tertiary schooling. These intervention measures are also connected to increased participation in economic activity and prospects for the accumulation of wealth, albeit dynamic processes with change becoming manifest with the passage of time. For youth and young adults, satisfying the need for social protection also has implications for reinforcing conformity and preventing youth and young adults from following deviant careers.⁵ To this end, it is clear that policy agendas associated with social protection are also connected to those associated with public order and public safety. Policy agendas linked to increasing public participation among youth and young adults are warranted, especially among member states in clusters where youth populations are becoming less predominant as a result of population dynamics. Such agendas are especially important in such settings to ensure that youth voices prevail to represent the rights and interests of youth and young adults in the face of declining proportions and numbers in populations.

Population ageing is a universal phenomenon, notwithstanding the fact that the pace is much faster in some member states than in others. Such a phenomenon reinforces the significance of policy agendas targeting growing elderly populations and declining youth populations. Having addressed policy agendas needed for youth populations, policy agendas that cater to the needs of growing elderly populations should also be identified. Such agendas target policy domains such as health, wealth accumulation, social protection and public participation. Much of societies' wealth lies in the wisdom and experiences of elder citizens, who possess institutional and lifelong knowledge that ought to be transmitted inter-generationally. The onus therefore is upon stakeholders to preserve the health and longevity of life of such citizens, as their knowledge and experience are critical to resilience-building initiatives targeting prospective generations.

Social protection, whether through the provision of national health insurance coverage, social insurance coverage or even remittances from children and other relatives abroad, can fill a void providing elderly citizens with access to quality health services or enabling them to meet their nutritional needs. Social protection of the elderly is also tied to monitoring their wealth status as a means towards levelling playing fields as much as possible through a reliance on intervention measures status designed to promote greater equality and equity in the allocation of wealth. Policy agendas targeting public participation among the elderly not only give them a voice to showcase their interests and safeguard their rights, but also present them with

opportunities to contribute towards building resilience among children or youth through their engagement in voluntary services and inter-generational exchanges that are philanthropic in nature.

The moderate growth-momentum populations constitute a cluster of member states that have experienced population growth fuelled by gains through net migration. In such countries, it has been suggested that strengthening resilience capabilities can be achieved through strategies that intensify levels of social cohesion – for example, reducing inequalities and inequities that otherwise prevail dependent upon the nativity status of the populations in those member states. In some instances, natives have more favourable experiences, but there may also be instances when it is immigrants who have more favourable experiences. These differences have to be managed through iterative processes of monitoring and pursuing intervention measures to facilitate greater equality and equity across nativity status. This is especially warranted when there is evidence of more favourable outcomes with the passage of time, irrespective of nativity status, particularly in the context of policy domains such as wealth accumulation, economic activity, education, health and social protection.

5.8 Concluding remarks

This study that forms the basis of this chapter is one of a number of other studies focusing on the resilience side of the coin. It is primarily focused on critically assessing the nature and scope of the social aspects of resilience building, as a means of facilitating the social development component of resilience. Other parallel studies have also been undertaken with similar aims in the context of building resilience capabilities associated with environmental management, good governance and economic aspects.

This chapter has provided a systematic framework for identifying the social aspects of resilience building. It has drawn on different forms of capital in order to pinpoint policy domains for the social aspects, each of which has numerous dimensions as reflected in the variables that have been identified. The social aspects are critical insofar as they provide a basis for shaping policy agendas geared towards stimulating social development through strengthening resilience and increasing levels of social cohesion. The chapter establishes five population clusters, which classify Commonwealth small states according to key demographic and socio-economic characteristics that inform prospective sets of cluster-specific policy agendas. The shaping of the policy agendas has been informed by a preventive model, which embraces future sensibilities as critical to problem solving that is predicated on the principles of systematic evaluation and, as such, is data driven.

Systematic evaluation hinges upon an appreciation of the theoretical connections between intervention measures and variation in outcomes associated with any given social aspect of resilience. It thrives upon evidence-informed policy formulation objectives with realistic performance targets, and implementation strategies that

adhere to appropriate monitoring standards. Additionally, the availability of valid data and presence technical skills, which would permit temporal analyses of the critical substantive issues, are important inputs that have to be considered given the insights that are to be gleaned from the study. Notwithstanding these requirements, there appear to be obvious gaps that have to be overcome. Rather than point to the gaps, the rest of the chapter will focus on the inputs that are deemed critical to overcome the gaps.

First, there is a need to review the list of proposed variables and indicators to ensure that routine sample surveys and other administrative data collection apparatus continue to produce the requisite data that are needed to permit efforts to track variation in social attributes. Moreover, there is a need to promote, encourage and facilitate training that would greatly contribute to the development of expertise in high-end statistical analysis and technical analyses akin to monitoring and evaluation. This could be a daunting challenge in small states, due to the lack of a critical mass.

Policy analysts and development specialists often articulate views about action to improve the circumstances of humankind. In so doing, they are frequently oblivious to the robust statistical requirements that are essential for contesting such views, largely as a result of their ignorance of statistical processes and, in particular, the intricacies of statistical analysis. In general, many policy analysts and development specialists overlook the technical requirements that inform inevitable methodological and statistical challenges, which have to be entertained and sustained in order to effectively fulfil the production of statistics that serve the needs of development programmes. On the other end, there are also official statisticians who lack an appreciation for sociological theory, development theory and research design issues. Thus, there is a need to ensure that official statisticians develop greater awareness and higher levels of competence in such areas to ensure that sufficiently valid data are produced.

Finally, many small states are beset with serious financial constraints, which result in little or no priority being given to sustaining statistical data collection and formal research activities. This chapter outlines a set of initiatives that can be realised only if greater priority is given to both activities.

Notes

- 1 Acculturation as a process of socialization into a new culture (Spencer, 1985:105). It can also be described as the outcome of intergroup contact in which the minority group adopts the culture of the dominant group (Brinkerhoff and White (1991:257).
- 2 Enculturation as a "process by which a society's culture is transmitted from one generation to the next" Haviland (1974:330)
- 3 According to Goodwin (2003,1), 'Financial capital facilitates economic production, though it is not itself productive, referring to a system of ownership or control of physical capital. Natural capital is made up of the resources and ecosystem services of the natural world. Produced capital consists of physical assets generated by applying human productive activities to natural capital and capable of providing a flow of goods or services. Human capital refers to the productive capacities of an individual, both inherited and acquired through education and training. Social capital, the most controversial and hardest to measure, consists of a stock of trust, mutual understanding, shared values and socially held knowledge.'

- 4 Lifetime reproductive experience of women.
- 5 Refers to careers that place them at greater risk of confrontation with law enforcement officials.

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Appendix 5.1 Statistics for member states

Table A5.1.1 Quasi-stationary ageing populations, Caribbean states

Selected indicator	Barbados	Guyana	St Kitts and Nevis	St Lucia	St Vincent and the Grenadines
Mid-year population (millions) 2013	0.3	0.8	0.1	0.2	0.1
Mid-year population (millions) 2025	0.3	0.8	0.1	0.2	0.1
Mid-year population (millions) 2050	0.3	0.8	0.1	0.2	0.1
Population size ratio – 2050 to 2013	1.1	1.0	1.1	1.1	1.2
Life expectancy at birth – male in 2013	73	63	72	72	70
Life expectancy at birth – female in 2013	77	69	77	77	74
Total fertility rate	1.8	2.6	1.8	2.0	2.2
Infant mortality rate (per 1,000 live births)	12	29	18	11	17
Net migration rate per 1,000 population	1	–8	1	1	21
Percentage of population <15 years old in 2013	22	37	23	25	26
Percentage of population 65+ in 2013	13	3	8	9	7
Median age – population in 2010	36.2	21.9	–	29.5	27.9
Median age – population in 2025	39.7	26.0	–	34.7	33.8
Median age – population in 2050	42.6	35.8	–	43.7	40.8
Land area (in square kilometres)	431	196,849	261	606	389
GDP per capita (in US dollars)	18,400	3,400	17,280	11,020	10,810
Percentage share of income – poorest fifth	–	–	–	–	–
Percentage share of income – richest fifth	–	–	–	–	–
Individual internet use in 2000	3.97	6.61	5.86	5.09	3.25
Individual internet use in 2006	55.30	–	49.00	24.50	12.00
Individual internet use in 2012	73.33	33.00	79.35	48.63	47.52

Table A5.1.2 Quasi-stationary ageing populations, Pacific states

Selected indicator	Samoa	Tonga	Tuvalu
Mid-year population (millions) 2013	0.2	0.1	0.01
Mid-year population (millions) 2025	0.2	0.1	0.01
Mid-year population (millions) 2050	0.2	0.1	0.01
Population size ratio – 2050 to 2013	1.1	1.2	1.2
Life expectancy at birth – male in 2013	72	70	63
Life expectancy at birth – female in 2013	74	75	67
Total fertility rate	4.5	3.9	3.1
Infant mortality rate (per 1,000 live births)	21	19	17
Net migration rate per 1,000 population	–17	–17	–9
Percentage of population <15 years old in 2013	38	37	32
Percentage of population 65+ in 2013	5	6	5
Median age – population in 2010	20.8	21.3	–
Median age – population in 2025	22.9	23.4	–
Median age – population in 2050	28.6	28.6	–
Land area (in square kilometres)	2,821	717	26
GDP per capita (in US dollars)	4,270	5,180	–
Percentage share of income – poorest fifth	–	–	–
Percentage share of income – richest fifth	–	–	–
Individual internet use in 2000	0.57	2.43	5.24
Individual internet use in 2006	4.47	5.85	–
Individual internet use in 2012	12.92	34.86	35.00

Table A5.1.3 Quasi-stationary ageing populations, remaining states

Selected indicator	Cyprus	Malta	Mauritius	Seychelles	Brunei Darussalam
Mid-year population (millions) 2013	1.1	0.4	1.3	0.1	0.4
Mid-year population (millions) 2025	1.4	0.5	1.3	0.1	0.5
Mid-year population (millions) 2050	1.4	0.5	1.3	0.1	0.5
Population size ratio – 2050 to 2013	1.3	1.1	1.0	1.1	1.3
Life expectancy at birth – male in 2013	76	79	70	69	77
Life expectancy at birth – female in 2013	81	83	77	78	79
Total fertility rate	1.5	1.5	1.4	2.4	1.6
Infant mortality rate (per 1,000 live births)	–	6.3	12.9	9.8	7
Net migration rate per 1,000 population	–	3	0	–3	3
Percentage of population <15 years old in 2013	17	15	21	20	25
Percentage of population 65+ in 2013	13	16	7	7	4
Median age – population in 2010	34.2	40.2	33.3	–	29.5
Median age – population in 2025	39.9	44.5	38.8	–	35.0
Median age – population in 2050	47.6	50.7	46.0	–	43.7
Land area (in square kilometres)	9,241	316	2,030	455	5,265
GDP per capita (in US dollars)	29,400	26,990	15,820	25,760	49,370
Percentage share of income – poorest fifth	–	–	–	4	–
Percentage share of income – richest fifth	–	–	–	70	–
Individual internet use in 2000	15.26	13.11	7.28	7.40	9.00
Individual internet use in 2006	35.83	40.41	16.70	34.95	42.19
Individual internet use in 2012	61.00	70.00	41.39	47.08	60.27

Table A5.1.4 High growth-momentum population, Pacific states

Selected indicator	Kiribati	Nauru	Papua New Guinea	Solomon Islands	Vanuatu
Mid-year population (millions) 2013	0.1	0.01	7.2	0.6	0.3
Mid-year population (millions) 2025	0.1	0.01	9.1	0.8	0.3
Mid-year population (millions) 2050	0.2	0.02	13.3	1.2	0.5
Population size ratio – 2050 to 2013	1.5	1.5	1.8	2.0	1.8
Life expectancy at birth – male in 2013	62	57	61	66	70
Life expectancy at birth – female in 2013	67	63	66	69	73
Total fertility rate	3.6	3.0	4.0	4.6	4.0
Infant mortality rate (per 1,000 live births)	38	44	45	40	21
Net migration rate per 1,000 population	-1	8	0	0	0
Percentage of population <15 years old in 2013	34	38	38	39	37
Percentage of population 65+ in 2013	4	2	3	3	4
Median age – population in 2010	–	–	20.4	19.5	21.2
Median age – population in 2025	–	–	23.2	21.8	24.4
Median age – population in 2050	–	–	28.3	27.6	30.8
Land area (in square kilometres)	811	21	452,860	27,986	12,189
GDP per capita (in US dollars)	3,380	–	2,780	2,170	4,500
Percentage share of income – poorest fifth	–	6	–	–	–
Percentage share of income – richest fifth	–	50	–	–	–
Individual internet use in 2000	1.79	2.99	0.84	0.48	2.11
Individual internet use in 2006	4.50	–	1.75	1.65	5.85
Individual internet use in 2012	10.75	54.0	2.30	7.00	10.60

Table A5.1.5 High growth-momentum populations, remaining states

Selected indicator	Belize	Maldives	Namibia
Mid-year population (millions) 2013	0.3	0.4	2.4
Mid-year population (millions) 2025	0.4	0.4	3.0
Mid-year population (millions) 2050	0.6	0.5	3.9
Population size ratio – 2050 to 2013	1.8	1.5	1.6
Life expectancy at birth – male in 2013	71	73	61
Life expectancy at birth – female in 2013	77	75	66
Total fertility rate	2.6	2.3	3.2
Infant mortality rate (per 1,000 live births)	14	9	36
Net migration rate per 1,000 population	5	0	–2
Percentage of population <15 years old in 2013	35	27	37
Percentage of population 65+ in 2013	4	5	3
Median age – population in 2010	22.0	23.6	20.3
Median age – population in 2025	27.0	30.8	24.6
Median age – population in 2050	35.7	41.6	31.6
Land area (in square kilometres)	22,810	298	823,290
GDP per capita (in US dollars)	6,880	7,690	7,470
Percentage share of income – poorest fifth	–	7	5
Percentage share of income – richest fifth	–	44	53
Individual internet use in 2000	5.96	2.20	1.64
Individual internet use in 2006	10.40	11.04	4.40
Individual internet use in 2012	25.00	38.93	12.94

Table A5.1.6 Moderate growth-momentum populations

Selected indicator	Antigua and Barbuda	Bahamas	Fiji
Mid-year population (millions) 2013	0.1	0.3	0.9
Mid-year population (millions) 2025	0.1	0.4	0.9
Mid-year population (millions) 2050	0.1	0.5	1.1
Population size ratio – 2050 to 2013	1.3	1.3	1.2
Life expectancy at birth – male in 2013	74	72	67
Life expectancy at birth – female in 2013	80	78	72
Total fertility rate	2.1	1.7	2.6
Infant mortality rate (per 1,000 live births)	16	16	26
Net migration rate per 1,000 population	0	6	–8
Percentage of population <15 years old in 2013	26	26	29
Percentage of population 65+ in 2013	7	6	5
Median age – population in 2010	–	30.9	26.4
Median age – population in 2025	–	35.8	29.7
Median age – population in 2050	–	41.2	35.6
Land area (in square kilometres)	440	10,010	18,274
GDP per capita (in US dollars)	16,260	29,740	4,880
Percentage share of income – poorest fifth	–	–	–
Percentage share of income – richest fifth	–	–	–
Individual internet use in 2000	6.48	8.00	1.50
Individual internet use in 2006	30.00	26.00	9.60
Individual internet use in 2012	59.00	71.75	33.74

Table A5.1.7 Moderate growth in high-mortality populations

Selected indicator	Botswana	Lesotho	Swaziland
Mid-year population (millions) 2013	0.9	2.2	1.2
Mid-year population (millions) 2025	2.1	2.5	1.4
Mid-year population (millions) 2050	2.6	3.0	1.8
Population size ratio – 2050 to 2013	1.4	1.4	1.5
Life expectancy at birth – male in 2013	47	48	49
Life expectancy at birth – female in 2013	46	48	48
Total fertility rate	2.7	3.1	3.5
Infant mortality rate (per 1,000 live births)	33	65	68
Net migration rate per 1,000 population	2	–2	–1
Percentage of population <15 years old in 2013	21	27	29
Percentage of population 65+ in 2013	11	7	8
Median age – population in 2010	22.0	20.1	19.3
Median age – population in 2025	24.8	23.0	22.0
Median age – population in 2050	32.5	29.0	27.7
Land area (in square kilometres)	566,730	30,355	17,204
GDP per capita (in US dollars)	16,520	2,210	4,840
Percentage share of income – poorest fifth	–	–	5
Percentage share of income – richest fifth	–	–	52
Individual internet use in 2000	2.90	0.21	0.93
Individual internet use in 2006	4.29	2.98	3.70
Individual internet use in 2012	11.50	4.59	20.78

Table A5.1.8 Ageing populations with high potential for declining size

Selected indicator	Dominica	Grenada	Jamaica	Trinidad and Tobago
Mid-year population (millions) 2013	0.1	0.1	2.7	1.3
Mid-year population (millions) 2025	0.1	0.1	2.9	1.3
Mid-year population (millions) 2050	0.1	0.1	2.8	1.2
Population size ratio – 2050 to 2013	0.9	0.9	1.0	0.9
Life expectancy at birth – male in 2013	71	70	71	68
Life expectancy at birth – female in 2013	77	75	76	74
Total fertility rate	2.0	2.0	2.1	1.8
Infant mortality rate (per 1,000 live births)	15	5	22	25
Net migration rate per 1,000 population	-6	-8	-6	-2
Percentage of population <15 years old in 2013	22	27	29	21
Percentage of population 65+ in 2013	11	7	8	9
Median age – population in 2010	–	25.0	27.0	31.9
Median age – population in 2025	–	31.4	31.3	39.4
Median age – population in 2050	–	41.3	40.2	43.6
Land area (in square kilometres)	751	344	10,831	5,128
GDP per capita (in US dollars)	12,190	10,300	–	22,400
Percentage share of income – poorest fifth	–	–	5	–
Percentage share of income – richest fifth	–	–	52	–
Individual internet use in 2000	8.81	4.06	3.12	7.72
Individual internet use in 2006	39.40	21.40	16.40	30.00
Individual internet use in 2012	55.18	42.09	46.50	59.52

Table A5.1.9 Data source by selected indicators

Selected indicator	Data source
Mid-year population (millions) 2013	World Population Data Sheet, Population Reference Bureau, 2013
Mid-year population (millions) 2025	World Population Data Sheet, Population Reference Bureau, 2013
Mid-year population (millions) 2050	World Population Data Sheet, Population Reference Bureau, 2013
Population size ratio – 2050 to 2013	World Population Data Sheet, Population Reference Bureau, 2013
Life expectancy at birth – male in 2013	World Population Data Sheet, Population Reference Bureau, 2013
Life expectancy at birth – female in 2013	World Population Data Sheet, Population Reference Bureau, 2013
Total fertility rate	World Population Data Sheet, Population Reference Bureau, 2013
Infant mortality rate (per 1,000 live births)	World Population Data Sheet, Population Reference Bureau, 2013
Net migration rate per 1,000 population	World Population Data Sheet, Population Reference Bureau, 2013
Percentage of population <15 years old in 2013	World Population Data Sheet, Population Reference Bureau, 2013
Percentage of population 65+ in 2013	World Population Data Sheet, Population Reference Bureau, 2013
Median age – population in 2010	United Nations, World Population Prospects 2012
Median age – population in 2025	United Nations, World Population Prospects 2012
Median age – population in 2050	United Nations, World Population Prospects 2012
Land area (in square kilometres)	United Nations, World Population Prospects 2012
GDP per capita (in US dollars)	World Population Data Sheet, Population Reference Bureau, 2013
Percentage share of income – poorest fifth	World Population Data Sheet, Population Reference Bureau, 2013
Percentage share of income – richest fifth	World Population Data Sheet, Population Reference Bureau, 2013
Individual internet use in 2000	International Telecommunications Union
Individual internet use in 2006	International Telecommunications Union
Individual internet use in 2012	International Telecommunications Union

Appendix 5.2 Matrix of policy prescriptions for member states

Table A5.2.1 High growth-momentum populations

Member state	Target population	Policy prescription
Belize	• Children	• Greater exposure to quality education
Kiribati	• Young adults	• Greater access to healthcare
Nauru	• Working-age persons	• Fertility reduction
Papua New Guinea, Solomon Islands, Vanuatu	• The elderly	• Enhanced economic activity
Maldives		• Greater opportunities to pursue decent work
Namibia		

Table A5.2.2 Medium growth-momentum populations

Member state	Target population	Policy prescription
Antigua and Barbuda	• Young adults	• Promotion of greater public participation
The Bahamas	• Working-age persons	• Promotion of greater levels of social cohesion between migrant and native populations with regard to the following:
Fiji	• The elderly	• accumulation of wealth
		• economic activity
		• xenophobia

Table A5.2.3 Moderate growth in high-mortality populations

Member state	Target population	Policy prescription
Botswana Lesotho Swaziland	• Children • Young adults	• Greater exposure to quality education • Greater access to healthcare • Fertility reduction • Enhanced economic activity • Greater opportunities to pursue decent work • Reduction of incidence rate for HIV/AIDS • Modified sexual behaviour to attain safer practices • Increased knowledge about HIV/AIDS • Reduction of discriminatory behaviour • Social protection: • healthcare for the aged • public participation for the aged • Greater levels of social cohesion across: • geographic location • wealth status • age

Table A5.2.4 Ageing populations with high potential for declining size

Member state	Target population	Policy prescription
Grenada Dominica Jamaica Trinidad and Tobago	• Children • Young adults • The elderly	• Greater exposure to quality education • Greater access to healthcare • Fertility reduction • Enhanced economic activity • Greater opportunities to pursue decent work • Promotion of greater public participation • Promotion of greater levels of social protection • dangerous circumstances • Attainment of greater equality and equity with respect to the following: • quality education at all levels • social protection • access to healthcare • greater food security coverage catering to the needs of young children in lower-wealth status groups

Table A5.2.5 Quasi-stationary ageing populations

Member state	Target population	Policy prescription
Barbados	• Children	• Follow policy prescriptions for moderate growth-momentum populations
Brunei Darussalam	• Young adults	
Cyprus	• Working-age persons	
Malta	• The elderly	• Follow policy prescriptions for ageing populations with high potential for declining population size
Mauritius		
St Kitts and Nevis		
St Lucia		
St Vincent and the Grenadines		• Follow policy prescriptions for high growth-momentum populations
Guyana		
Samoa		
Seychelles		
Tonga		
Tuvalu		