

KPMG's International Development Services  
in Collaboration with Researchers from  
the Overseas Development Institute (ODI)

# Managing Change and Cultivating Opportunity

The Case for a Capability Index Measuring  
Countries' Ability to Manage Change

**“We need to understand how countries manage change. This is critical to directing efforts at improvement. Within the landscape of existing indices, there is none that specifically captures this dimension of capability.”**

**Simon Maxwell**

Senior Research Associate at ODI

**“A new Capability Index would help to build greater understanding and enable countries to improve their management of change in an increasingly uncertain world.”**

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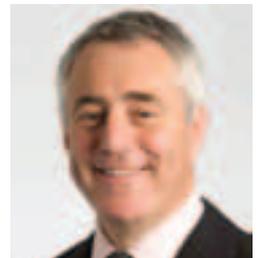
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## Foreword

Why are some economies able to manage change and capitalize on new opportunities better than others? Why do some developing countries react better to economic crises and natural disasters than others? To answer such questions, a greater understanding and reliable method for measuring the capability of governments to manage change is crucial. Moreover, the ability to adapt, respond, and create new opportunities is critical to a country's future prosperity and development.

During the 2010 World Economic Forum (WEF) in Davos, Switzerland, a small group of individuals began a discussion around the apparent lack of a reliable and appropriate measure to assess the capabilities of a country to cope with, respond to, and stimulate, change. These discussions prompted KPMG, in collaboration with researchers from the Overseas Development Institute (ODI), to begin evaluating the need and opportunity for a new index to:

- Measure a country's ability to adapt to structural changes and shocks, and capitalize on opportunities in a changing environment
- Provide a measure to inform policy development and influence donor action toward strengthening government capabilities

The food, fuel and financial crises of recent years, and the future threat of climate change, have highlighted the importance of building the capability to manage change. "We need to understand how countries manage change," says *Simon Maxwell, Senior Research Associate at ODI*. "This is critical to directing efforts at improvement. Within the landscape of existing indices, there is none that specifically captures this dimension of capability."

In this paper, KPMG and researchers from ODI present an analysis of the state of available country indices to measure economies' and societies' capability to cope, evolve, innovate and stimulate change, and discuss the rationale for a new Capability Index, and how it would look.

"A new Capability Index would help to build greater understanding and enable countries to improve their management of change in an increasingly uncertain world," states *Timothy A. A. Stiles, Partner, KPMG in the US and Global Head of International Development Services*. "This could generate significant benefits in terms of growth and poverty reduction."

With the development of a functional Capability Index key stakeholders (such as development agencies, developing country governments, business, research institutes and NGOs) would be equipped with an essential tool to identify important areas that require focused improvement within a developing country and help ensure the structures are in place not only to manage change, but to cultivate that change into opportunity.

We hope this paper will provide a foundation and stimulate further discussion within governments and the development community, and encourage decision-makers to join our initiative to create a comprehensive Capability Index.

# List of Acronyms

<b>ASEAN</b>	Association of Southeast Asian Nations	<b>LDC</b>	Least-Developed Country
<b>BAC</b>	Botswana Accountancy College	<b>NGOs</b>	Non-Governmental Organizations
<b>CPIA</b>	Country Policy and Institutional Assessment	<b>ODI</b>	Overseas Development Institute
<b>CVI</b>	Composite Vulnerability Index	<b>PSB</b>	Productivity and Standards Board (Singapore)
<b>DKV</b>	Dubai Knowledge Village	<b>PSDC</b>	Penang Skills Development Centre
<b>EDB</b>	Economic Development Board (Singapore)	<b>PVI</b>	Prevalent Vulnerability Index
<b>EIU</b>	Economist Intelligence Unit	<b>R&amp;D</b>	Research and Development
<b>EVI</b>	Economic Vulnerability Index	<b>RAFU</b>	Road Agency Formation Unit (Uganda)
<b>FDI</b>	Foreign Direct Investment	<b>RMI</b>	Risk Management Index
<b>GCI</b>	Global Competitiveness Index	<b>SBR</b>	State–Business Relations
<b>GDP</b>	Gross Domestic Product	<b>SEZ</b>	Special Economic Zone
<b>HRDF</b>	Human Resource Development Fund (Malaysia)	<b>SOPAC</b>	South Pacific Applied Geoscience Commission
<b>IADB</b>	Inter-American Development Bank	<b>UAE</b>	United Arab Emirates
<b>IBRD</b>	International Bank for Reconstruction and Development	<b>UK</b>	United Kingdom
<b>ICT</b>	Information and Communications Technology	<b>UN</b>	United Nations
<b>IDA</b>	International Development Association	<b>UNCTAD</b>	UN Conference on Trade and Development
<b>IFC</b>	International Finance Corporation	<b>UNDP</b>	UN Development Programme
<b>IMF</b>	International Monetary Fund	<b>UNIDO</b>	UN Industrial Development Organization
<b>IT</b>	Information Technology	<b>WEF</b>	World Economic Forum
		<b>WGI</b>	Worldwide Governance Indicators

# Executive Summary

Countries are constantly confronted with economic ‘shocks’ – short-term changes such as financial crises or natural disasters – and long-term, widespread processes of change that evolve a country’s fundamental structure over time. Understanding the capability of a country to manage these different types of change is critical. Those that do so effectively, identify new opportunities arising from change, and can proactively stimulate structural change to achieve greater economic prosperity. The ability of a country to respond to and manage these types of change will play an important role in determining its economic prospects, both in the short and long-term.

*As Simon Maxwell, Senior Research Associate at ODI states, “My perspective has been to focus on the ‘capability’ of countries, not just to recover to the status quo ante, but to prepare their economies and societies for the next big wave of change and challenges, some of which can be thought of as risks...but some of which (like technological breakthroughs) can be thought of as opportunities.”<sup>1</sup>*

The food, fuel and financial crises that have hit developing countries in recent years highlight the importance of understanding this issue better, as do the major structural changes and shocks (presenting both risks and opportunities) that are likely to occur as a result of climate change and its mitigation.

A better understanding of the various components of this capability to manage change, combined with a methodology for measuring these indicators at the national level, would help inform policy development and help donors target and prioritize their assistance to promote these capabilities.

There is little discussion of this concept of ‘managing change’ in academic literature. Some papers focus on ‘vulnerability to change’, encompassing both the degree of a country’s ‘exposure’ to shocks (determined by a country’s economic characteristics) and its ‘resilience’ to shocks (which looks at how well-placed a country is to manage shocks). However, such analysis does not include issues relating to a country’s ability to respond to or proactively encourage structural change. Other literature focuses on the policies countries can pursue to take advantage of new market opportunities and enhance their growth prospects, while others focus on the role of governance and institutions in determining a country’s development prospects, but again, these rarely focus on this capability to manage change.

<sup>1</sup> Maxwell, S. (2010) ‘Laying the Foundation for a Long-Term G20 Work Programme on Development.’ Revised paper prepared for the G20 International Symposium, September.



This paper examines the various types of capability that may determine a country's ability to manage change to its own advantage, and categorizes the factors that determine a country's underlying capability to manage change into three broad groups:

- 1) Economic capabilities – relating to economic policies and frameworks
- 2) Governance and institutional capabilities – relating to the capacity of government, and the institutional arrangements that have been established
- 3) Social capabilities – relating to the characteristics of a society, such as literacy, social support networks and equity (see Figure 1)

While the appropriate actions and policies to manage change will depend on the nature of the change itself, the 'underlying capability' of a country to manage change depends on certain fundamental characteristics which are important regardless of the nature of the change.

Also provided are several examples where the capability to manage change has been demonstrated:

- In Tanzania, strong political will, as well as good quality, flexible institutions, led to the adoption of effective and timely policy interventions in response to the financial crisis in recent years. In contrast, Sudan was very slow in responding to the crisis, partly because of relatively weak research and analytical capabilities within the government.
- Countries such as Singapore, Costa Rica, and Mauritius have proactively brought about positive structural change, for example, by investing in skills and infrastructure, and taking other steps in order to move their countries up the manufacturing value-added ladder over time.

This paper then considers the extent to which existing data and indicators may be used to measure these capabilities. We conclude that while there are many existing indices which capture some relevant factors, there is none which bring together all the factors required to examine a country's overall capability to manage change. The WEF's Global Competitiveness Index, the World Bank Governance Indicators, and the World Bank's Country Poverty Impact Assessment all provide a range of indicators that could be drawn on to examine the capability to manage change, but they do not capture all the relevant issues. For example, our analysis shows there are various important dimensions of capability which do not appear to be adequately captured, such as:

- R&D policies and institutional arrangements
- Effectiveness of state-business relations
- Policies that may contribute to economic diversification
- Social safety nets for households
- Safety nets for firms affected by economic shocks
- Risk management capabilities
- Entrepreneurship
- Family/community support networks

We conclude that there is a need to develop a new 'Capability Index', which would measure these underlying capabilities. This would:

- Enable developing countries to benchmark their progress over time
- Help inform development agencies and donors which countries are better prepared to cope with change
- Help donors target, prioritize, and design their assistance accordingly
- Assist governments, donors, and their advisors to spot and mitigate potential areas for improvement
- Provide input into policy and regulatory development
- Inform investors looking for growth opportunities and minimize risks, facilitating further private sector development
- Enable further academic analysis to strengthen the global understanding of the determinants of capability in different situations

The index could be tested, refined and improved over time, measuring the effectiveness of policy responses to events as they unfold.

Experience shows that indices can be very effective in focusing policymakers' attention on an issue, and encouraging improvement. For example, countries often cite improvements in their rankings in the World Bank's Doing Business index as evidence of their commitment to making the country a better place to do business.

KPMG and ODI intend to develop a new Capability Index, with the goal of helping to build greater understanding and enable countries to improve their management of change in an increasingly uncertain world, to generate growth and reduce poverty.

# 1. Introduction: The Importance of Capability to Manage Change



Countries are constantly confronted with economic shocks – short-term or temporary changes such as financial crises or natural disasters – as well as ongoing processes of structural change – long-term, widespread changes in fundamental structure. Countries can identify new opportunities arising from such change, and proactively stimulate structural transformation to cultivate greater economic prosperity.

The ability of a country to respond to and manage change effectively, will play an important role in determining its economic prospects, both in the short and long-term. Understanding the capability of a country to manage these different types of change is critical. In this paper, this is referred to as ‘change management capability.’

The food, fuel and financial crises that have hit developing countries in recent years highlight the importance of understanding change management capability better, as do the major structural changes and shocks (presenting both risks and opportunities) that are likely to occur as a result of climate change and its mitigation.

A key part of the international agenda following the financial crisis has been to develop better systems for managing change or shocks, and to ‘build back better’ in a way that:

- 1) makes economies less vulnerable to volatility
- 2) enables them to take advantage of new opportunities
- 3) helps them respond to and also proactively stimulate structural change

A better understanding of the various components of this capability to manage change, should include economic, governance and social dimensions, and a methodology for measuring the indicators at the national level. It could help inform policy development and donors to target and prioritize their assistance to improve these capabilities.

## 1.1 Managing Structural Change

Structural change in an economy refers to long-term, widespread transformation in fundamental composition. Structural change in one country can have a significant impact on demand in another, which in turn can lead to structural change in that country. For example, the development of the Chinese manufacturing industry has led to a shift away from the manufacturing sector towards the service sector in many developed countries, such as the UK.

Climate change, and its mitigation, is also likely to lead to major structural changes. For example, climate change may reduce agricultural productivity in some countries and increase it in others. Meanwhile, patterns of demand will shift in response to mitigation policies.

Structural changes affect the sources of growth in a country, and can have a major impact on a country's long-term growth prospects and livelihood opportunities. Having a good policy framework in place that promotes investment and innovation is likely to enable countries to take advantage of new opportunities, such as new markets generated by climate change mitigation. Governments can also take proactive steps to encourage positive structural change, in order to improve a country's economic prospects.

Case 1 shows how Singapore was able to proactively induce structural change, by upgrading the economy, and diversifying and attracting investment using appropriate institutions and policies.

### **CASE 1: Singapore stimulates structural change, through strategic, targeted investment in human capital and infrastructure<sup>2</sup>**

Technological progress, education and training, and a targeted investment policy have been key elements of the successful strategies that countries such as Singapore have implemented to improve their competitiveness.<sup>3</sup>

In the 1960s, Singapore was a poor country with few resources – similar to many low-income countries. At US\$400, its income per person was on par with Ghana. Since then, incomes in Singapore have risen remarkably, enabling a much higher standard of living and human development. Singapore's economy has outpaced many other countries, enjoying one of the world's fastest growth rates since the 1960s. Now, with the highest gross domestic product (GDP) per capita and one of the best competitiveness scores in Asia, Singapore shows the critical importance of heavy

investment in education, good quality physical and knowledge infrastructure, and appropriate incentives structures, all targeted at meeting the needs of the private sector.

For example, Singapore's government used policy tools such as a Skills Development Fund to enhance the technical skills of its workforce, in ways that met the demand of the private sector for skilled labor, and enhanced the capacity of the country to learn and innovate. This facilitated technological progress and improvement in the sophistication of economic activity over time.

The framework of investment incentives has evolved in parallel, as the country has moved up the development ladder. In the 1960s and early 1970s, employment was a major focus; in the 1980s, it was

capital-intensive projects; and in the 1990s knowledge-intensive sectors. At the same time, Singapore's Economic Development Board has been proactively developing infrastructure and relevant support institutions to attract foreign direct investment (FDI).

By deliberately upgrading skills and infrastructure over time, consistent with private sector needs, Singapore's government has facilitated a transformation in the types of economic activity that are undertaken. This demonstrates how governments can proactively stimulate structural change, resulting in impressive growth and development.

<sup>2</sup> Boxed based on Velde, D.W. te (2003), 'Policies towards Foreign Direct Investment', in Wignaraja, G (ed.), *Competitiveness Strategy and Industrial Performance: A Manual for Policy Analysis*, London: Routledge.

<sup>3</sup> Lall, S. (2001) *Competitiveness, Technology, and Skills*. Cheltenham: Edward Elgar.

## 1.2 Managing Economic Shocks

Short-term or temporary changes, referred to as ‘economic shocks,’ include events such as financial crises or natural disasters – although separating short-term, temporary impacts from longer-term or permanent impacts can sometimes be difficult. Economic shocks can have a major effect on a country’s level of income and welfare in both the short and long-term. Financial crises can have significant short-term effects (average of nine percent of output peak-to-trough<sup>4</sup>) as well as ongoing long-term effects.<sup>5</sup>

Economic volatility can be particularly detrimental for the poorest, who are already struggling to survive and who often do not have the resources to protect themselves from change. They can end up sacrificing assets (e.g. livestock) with negative long-term consequences. How a country copes with these changes will also play an important role in determining their impact. A strong capacity to deal with change can enable a country to minimize the economic costs of negative changes and take advantage of any opportunities that arise. The examples in Case 2 illustrate how governments have done this both well and poorly, in Tanzania, Bangladesh and Sudan.

### CASE 2: How governance and institutional capabilities affect countries’ ability to cope with global financial crisis

In the recent global financial crisis, the ability of developing countries to respond rapidly and effectively depended not only on the existence of fiscal space and macro-economic stability, but also on a number of governance factors.<sup>6</sup> Here we compare three countries hit by the crisis, each coping with it differently, partly due to their different governance and institutional structures.<sup>7</sup>

In Tanzania, strong political will, as well as good-quality and flexible institutions, led to the adoption of effective and timely policy interventions in response to the crisis. For example, a broad consultative mechanism involving the Ministry of Finance, the Central Bank and other stakeholders was put in place in March 2009 to discuss the impacts of the global financial crisis and to suggest mitigation measures. As a result, a special rescue package (the biggest in sub-Saharan Africa) was adopted.

In Bangladesh, the authorities were able to respond to the crisis effectively, but slowly. Even though institutions were flexible, they were constrained by limited technical and implementation capacities. For example, there is evidence that research and analytical capacity of the Ministry of Finance is relatively weak and authorities tend to have limited availability of up-to-date data. Consequently, although in Bangladesh authorities were able to implement a number of effective institutional arrangements such as a crisis task force that suggested a number of effective measures to support ready-made garments entrepreneurs who were severely hit by the crisis, the design and implementation of some policy responses occurred much slower than was desirable. For example, the proposed policy to provide cash incentives for apparel exports to new markets took a long time to be implemented.<sup>8</sup>

Compared with both Tanzania and Bangladesh, Sudan was very slow in responding to the crisis, partly because a ‘wait and see’ strategy was adopted. The slow response is also explained by inadequate research and analytical capabilities within the Central Bank, Ministry of Finance and National Economy (MFNE). Moreover, there is little evidence on the role and effectiveness of those institutional arrangements that have been implemented – such as the coordination mechanisms between the MFNE and Central Bank to examine the possible crisis effects on the economy and provide policy options to the government.

<sup>4</sup> Reinhart, C. and Rogoff, K.S. (2008) ‘The Aftermath of Financial Crises.’ American Economic Association Meetings, San Francisco, January

<sup>5</sup> International Monetary Fund (IMF) (2009) *World Economic Outlook Autumn 2009*. Washington, DC: IMF.

<sup>6</sup> Te Velde, D.V. et al. (2010), ‘The global financial crisis and developing countries: Phase 2 synthesis’, ODI Working paper 316.

<sup>7</sup> Massa, I. (2010), ‘The global financial crisis and developing countries: A literature survey’ (unpublished).

<sup>8</sup> Massa, I. (2010), *Ibid.* The conclusion was based on in-country consultation: ‘There is also a criticism on the lack of speedy release of money under cash incentives as well (i.e. lack of implementing capacity). Although decision to provide cash incentives (5 per cent) for exports of apparels to new markets was taken on November 2009, it took a while to put this in practice.’

## 1.3 Measuring Change Management

The underlying capability of a country to manage change is very important for growth, development and poverty reduction. In a globalized world, with greater interdependence amongst countries, externally induced structural changes and economic shocks may become increasingly common, as changes are transmitted between countries more easily.

The appropriate actions and policies to manage change will depend on the nature of the change itself – while the ‘underlying capability’ of a country to manage change depends on certain fundamental characteristics which are important regardless of the nature of the change.

There is little discussion of this concept of ‘managing change’ in the academic literature. Some papers focus on ‘vulnerability to change’, encompassing both the degree of a country’s ‘exposure’ to shocks (determined by a country’s economic characteristics) and its ‘resilience’ to shocks (which examines how well placed a country is to manage shocks).<sup>9</sup> However, such analysis does not include issues relating to a country’s ability to respond to or proactively encourage structural change. Other literature focuses on the policies countries can pursue to take advantage of new market opportunities and enhance their growth prospects<sup>10</sup> (see Appendix 2, which discusses the Growth Commission findings), while some other literature focuses on the role of governance and institutions in determining a country’s development prospects – but again, rarely focus on how this affects the capability to manage change.<sup>11</sup>

A recent paper introducing the concept of ‘capability traps’, focuses on the importance of the capacity of governments to undertake policy implementation and service provision, but does not look at capability to manage change, nor the wider set of capabilities (beyond government capacity) that are discussed in this paper. However, the paper highlights the crucial importance of understanding underlying capabilities in order to explain differences in development performance and to inform the design of policy interventions. It also notes the lack of measures currently available to assess them.<sup>12</sup>

This pattern is also reflected in the available indices and data. There are several vulnerability indices, some of which include measures of resilience; there are indices that measure competitiveness and business policies; and there are many governance indices. However, none bring together the various factors to examine a country’s overall capability to manage change.

In addition, most indices focus on ‘outputs’ rather than ‘inputs’. An input-oriented indicator is one that focuses on policy and other actions that determine an outcome, whereas an output indicator is one that measures the outcome itself. For example, an input indicator of trade might constitute a measure of trade policymaking institutions and rules, whereas an output indicator measures trade performance, such as the volume of goods traded.

<sup>9</sup> See Briguglio et al. 2008.

<sup>10</sup> See Lall, S. (2001) *Competitiveness, Technology, and Skills*. Cheltenham: Edward Elgar. Lall, S. (1996), *Learning from the Asian Tigers*, MacMillan Press, London. And Lin, J.Y. and Monga, C. (2010) ‘Growth Identification and Facilitation: The Role of the State in the Dynamics of Structural Change.’ *Development Policy Review*, forthcoming. Also Appendix 2.

<sup>11</sup> The gaps in the literature are discussed further in Foresti et al. 2010.

<sup>12</sup> Pritchett, L. Woolcock, M. and Andrews, M. (2010) *Capability Traps? The Mechanisms of Persistent Implementation Failure*. Centre for Global Development Working Paper 234.



A measure of the underlying capability of a country to manage change will, by definition, need to be based on input indicators. Most existing indices rely mainly on output indicators. It is particularly useful to focus on input indicators, because they can, for the most part, be directly controlled by governments – unlike output indicators, which depend also on externally-determined factors.

Better understanding could be achieved through the construction of a new Capability Index, which would define, measure and aggregate the various factors that determine a country's capability to manage change. Such an index could allow countries to be benchmarked over time; signal which countries are better prepared to cope with change; help governments and donors spot potential future problems; inform policy in developing countries; and help donors target and prioritize their assistance accordingly.

A Capability Index could also be of considerable use to investors looking for growth opportunities and to minimize risks. In addition, an index could provide a new cross-country dataset measuring change management factors, which would facilitate further empirical analysis to strengthen understanding of the determinants of capability in different situations, and better inform policy development.

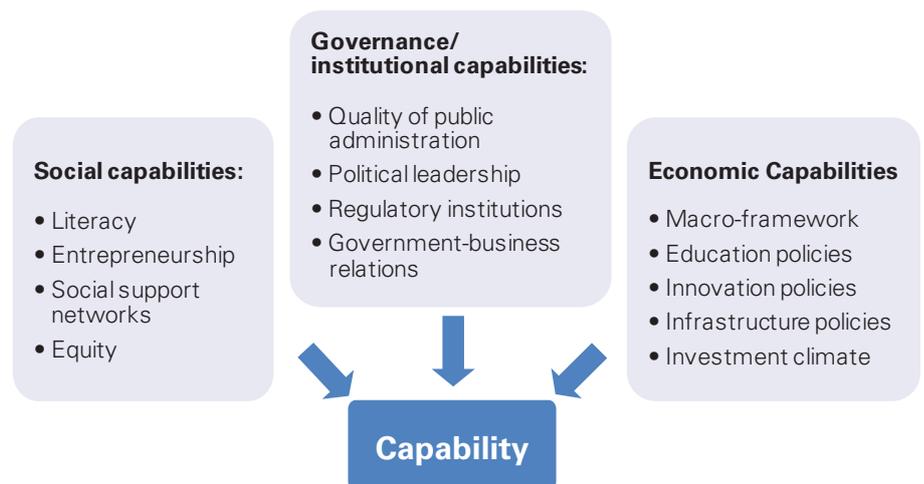
Section 2 discusses in more detail the various factors that may determine a country's capability to manage change. Section 3 examines existing indicators available to assess capability factors and examines the landscape of existing indices to illustrate the gap in the market for a new Capability Index.

## 2. Determinants of Capability to Manage Change

We categorize the factors that determine a country's underlying capability to manage change into three broad groups:

1. Economic capabilities – relating to economic policies and frameworks
2. Governance and institutional capabilities – relating to the capacity of government, and the institutional arrangements that have been established
3. Social capabilities – relating to the characteristics of a society, such as literacy, social support networks and equity (Figure 1)

**Figure 1: The dimensions of capability to manage change**



### 2.1 Economic Capabilities

The economic capabilities of a country include factors relating to financial and economic policies and frameworks.

- **Sound macroeconomic framework, fiscal 'space' to cope with changes, flexible exchange rate, strength of automatic stabilizers, etc.** Evidence on the effects of the global financial crisis clearly points to the importance of fiscal space and stabilizers necessary to cushion the impact of a crisis (see recent International Monetary Fund (IMF) regional economic outlooks for Africa).<sup>13</sup>
- **Policies in place to promote innovation and engagement with science and technology.** These include, intellectual property rights, research and development (R&D) policies. Technologies were also a key factor behind the countries' competitiveness.<sup>14</sup>

<sup>13</sup> Te Velde, D.W. et al. (2010) 'The Global Financial Crisis and Developing Countries: Synthesis of the Findings of 11 Country Case Studies.' Global Financial Crisis Discussion Paper. London: ODI

<sup>14</sup> Lall, S. (2001) *Competitiveness, Technology, and Skills*. Cheltenham: Edward Elgar.



- **Appropriate skills, education and training, flexible labor markets.** Skills are a key factor behind countries' competitiveness and their ability to deal with shocks or technical change.<sup>15</sup>
- **Appropriate infrastructure.** Infrastructure can help improve development and household incomes, as well as assist firms to cope with shocks.
- **The right economic conditions in place for investment.** These include business environment, access to financing, competitive environment; appropriate tax rates and incentives, and good quality tax administration.
- **Policies that may contribute to economic diversification.** Such policies include, special economic zones (SEZs), etc. Countries that were more diversified were also better able to withstand the financial crisis.<sup>16</sup>
- **Open trade and investment policies.** There is a long history of research finding a positive correlation between openness and growth.

### CASE 3: Weathering the fall-out of the global financial crisis – macroeconomic management capabilities<sup>17</sup>

Some countries have responded better to the global financial crisis than others. Here we compare the budgeting practices of two countries that are both heavily dependent on natural resources, and thus on commodity prices. Prior to the crisis, Sudan had relatively weak budgeting practices and low reserves, whereas Bolivia used high commodity prices to build up reserves. As the crisis hit, Sudan had to react to falling revenues, whereas Bolivia could draw on its reserves. Bolivia was better able to respond to the crisis because of its superior macroeconomic management.

In Sudan, a sharp decline in oil revenues meant a critical choice: to cut current

spending and/or to delay spending on development projects. In both cases, prioritization of outlays became important. The 2009 budget concentrated on meeting critical current spending on wages and salaries and other strategic recurrent spending items. The first quarterly report on the 2009 budget indicated that actual oil revenues were only 50 percent of budgeted figures. As a result, actual expenditures were reduced sharply from the 2008 level, a serious deviation from budgeted targets. The government had to reduce spending on some social and development projects as a result.

In Bolivia, on the other hand, the continuous current account surpluses

witnessed prior to the global crisis brought about an impressive increase in the stock of foreign exchange reserves held by the Central Bank of Bolivia, rising from US\$1.1 billion at the end of 2004 to US\$7.8 billion in September 2008. This meant that Bolivia has been in a much better position to weather the storm without damaging important spending programs.

<sup>15</sup> Lall, S. (2001) *Competitiveness, Technology, and Skills*. Cheltenham: Edward Elgar.

<sup>16</sup> Te Velde, D.W. et al. (2010) 'The Global Financial Crisis and Developing Countries: Synthesis of the Findings of 11 Country Case Studies.' Global Financial Crisis Discussion Paper. London: ODI.

<sup>17</sup> Box based on Te Velde, D.W. et al. (2010) 'The Global Financial Crisis and Developing Countries: Synthesis of the Findings of 11 Country Case Studies.' Global Financial Crisis Discussion Paper. London: ODI

**CASE 4:****St. Lucia – responding to structural change by creating a good investment climate for the tourism industry**

Before 1965 there was almost no tourism industry on the Caribbean island of St. Lucia. However, in order to reduce dependence on bananas and sugar – in the face of changes in international preferential trading arrangements that would erode St. Lucia’s competitiveness in those products – the government made a conscious decision to diversify by developing the tourism industry. The government provided generous incentives and access to the best beaches in order to attract investors. It also focused on infrastructure development in the north

of the island – where most hotels are now located – such as the Pigeon Island Causeway, which paved the way for the development of Rodney Bay Marina, which in turn allowed for the creation of a yachting industry worth US\$50 million per year.

As a result of these efforts, there was a great deal of private sector investment, with many new hotels being built, fueling a construction boom. Tourism marketing budgets have also increased, promoting St. Lucia as a tourist destination, and strengthening incentives for private sector investment. In

addition, the institutional infrastructure has been established to organize large events (carnivals, jazz and flower festivals, sports events, etc.), capitalizing on cultural assets. For example, the St. Lucia Tourist Board organizes the annual St. Lucia Jazz Festival, which has become an internationally recognized event since its establishment in 1991, and brings in visitors during a relatively quiet period of the year. The Festival was responsible for eight percent of visitor expenditure in 2006. Overall, the tourism industry is now worth approximately four times the value of the banana sector.

Source: Interviews in St. Lucia.<sup>18</sup>

**CASE 5:****The importance of capability in relation to infrastructure policy**

Appropriate and good-quality infrastructure helps promote positive structural change and helps households and firms cope with shocks. It can provide flexibility in taking on new opportunities when responding to changes. Also, high-quality and responsive institutions lie behind the ability to plan for good-quality and appropriate infrastructure.

A range of studies provide empirical evidence of the positive relationship between investment in infrastructure and good economic outcomes.<sup>19</sup> In addition, infrastructure plays an important role in achieving other development goals. For example, one study which examined experience in Uganda during the 1990s, shows that progress in improving access to

basic education and healthcare depended on complementary investments in electricity and other infrastructure.<sup>20</sup>

It is important to consider what underpins the capability associated with ensuring high-quality infrastructure, such as the quality of the coordinating agencies to ensure good and appropriate infrastructure. Another example is the case of Uganda and the policies and institutions underlying investment in roads.<sup>21</sup> The paper suggests that the Ugandan Road Agency Formation Unit (RAFU) has developed capacity for economic cost-benefit analysis but shows that, according to the World Bank’s Country Economic Memorandum, political factors have caused budget allocation and execution

in the road sector to differ considerably from economic priorities. A ‘Road Fund’ has been established, which should lead to an increased budget allocation for road maintenance to eliminate the backlog of work at national and district levels. The government is aware that these funds are not always utilized efficiently. As a result, unit costs for constructing roads in Uganda are high, although this is also partly because of the lack of competitive contractors.

<sup>18</sup> Qureshi, M. and D.W. te Velde (2008), *Growth strategies for small states in a globalising world: the role of Knowledge-based and Service Industries*, Commonwealth.

<sup>19</sup> Estache (2006) suggests that *economic* returns on investment projects average 30-40 percent for telecommunications, more than 40 percent for electricity generation and more than 200 percent for roads. Esfahani and Ramirez (1999) show a positive relationship between power generation capacity and GDP per capita. Calderon and Servén (2008) also provide empirical estimates of the positive effects of infrastructure on growth in Africa.

<sup>20</sup> Deiniger and Okidi (2004) and 20 Te Velde (2008)

<sup>21</sup> Te Velde (2008)

### CASE 6: Diversifying into other light manufacturing

Evidence suggests that countries with adequate public policies and private sector engagement have used Special Economic Zones (SEZs) and the opportunities provided by external trade preferences for garments, to move up the manufacturing value-added ladder over time (e.g. Asian Tigers, Mauritius, Costa Rica). Other countries have used trade preferences to attract garments as an important part of their manufacturing base (e.g. Lesotho, Malawi). However, they may still have to make full use of the opportunities offered to develop dynamically and diversify into other activities, at a time when they are facing increased competition from other countries such as China.

Developing countries that have used textiles and clothing to develop and subsequently

attract high-quality investment and upgrade human resources have tended to be successful as long as appropriate policies and institutions are in place.

Singapore's Pioneer Industries Ordinance of 1959 encouraged firms to develop 'new' products – the share of manufacturing output by firms with 'pioneer status' increased from seven percent in 1961 to 51.1 percent in 1971 and 69 percent in 1996. Malaysia offered manufacturers tax rebates if they provided their workers with training by designated institutes.

Costa Rica used consistent skills development policies that attracted not just garment assembly investors but also electronic investors who, in turn, and in coordination with local governments and institutes, attempted to further develop

skills. During the 1980s, as opposed to reducing investment in human resources at a time of crisis in the industry, the government instead took the opportunity to revisit its human resource development strategy and better tailor it to the needs of the private sector.

Mauritius, a relatively small country, but one well-endowed with human resources, has developed since the 1980s on the basis of foreign and local investment in garments and textiles in its SEZ program.<sup>22</sup> Skills, and secondary enrolment rates in particular developed further as a result, and Mauritius has since moved into high-skill activities such as financial services. Mauritius has engaged positively with globalization, which coincided with successful human resource development.

## 2.2 Governance and Institutional Capabilities

Governance and institutional capabilities relate to the capacity of government and public administration and the institutional arrangements that have been established in a country.

- **Quality and capacity of public administration.** An effective bureaucracy is better able to plan for and manage changes. It needs to be embedded in government, but with a degree of autonomy,<sup>23</sup> so that it will not succumb to political interference.
- **State business relations (SBRs).** Institutions such as SBRs affect growth positively because effective SBRs ensure that government policy is designed in a way that is cognizant of the needs of the private sector.<sup>24</sup>
- **Financial regulatory institutions.** These will determine how well the financial sector can respond to change. For example, an independent central bank is often seen as beneficial for setting monetary policy, in order for it to be independent of the electoral cycle.
- **Risk management institutions/capabilities.** The extent to which a government has developed processes or mechanisms for monitoring and managing risks is likely to determine how well policy responds to those risks.

<sup>22</sup> Subramanian and Roy, 2003; UNCTAD, 1999

<sup>23</sup> Evans, P. (1995) *Embedded Autonomy: States and Industrial Transformation*. Princeton, NJ: Princeton University Press.

<sup>24</sup> Sen, K. and Te Velde, D.W. (2009) 'State-Business Relations and Economic Growth in Sub-Saharan Africa.' *Journal of Development Studies* 45(8):1-17.



- **Environmental policy institutions/capabilities.** The institutional arrangements and responsibilities established in a country are likely to determine the effectiveness of environmental policy. Independence from the political process and special interest groups can be important.
- **Leadership.** The Commission on Growth and Development emphasizes the importance of political leadership in determining growth (see Appendix 2), “Policy makers have to choose a growth strategy, communicate their goals to the public, and convince people that the future rewards are worth the effort, thrift, and economic upheaval. They will succeed only if their promises are credible and inclusive, reassuring people that they or their children will enjoy their full share of the fruits of growth.”<sup>25</sup>

## 2.3 Social Capabilities

Social capabilities relate to the characteristics of a society and the environment determining individual behavior in a country.

- **Information, media, knowledge dissemination, literacy.** The media plays an important role in disseminating information about new challenges and opportunities being faced, enabling people to respond in a more timely manner. Literacy is important in ensuring people know about and understand the threats and opportunities they face, and the steps they can take to respond to them. Information provision, by contributing to more open and transparent decision-making, increases accountability, and likely will strengthen capability and improve governance.
- **Entrepreneurship.** This determines the extent to which a society will spot and respond opportunistically to economic shocks or structural changes, and the extent to which individuals will be willing to undertake investment and innovation.
- **Family/community support networks.** Local support networks determine the resilience of a society, and its ability to cope with economic shocks. Having a well-developed support network can also facilitate savings and investment, which can in turn facilitate entrepreneurship, as evidenced by the many ‘self help’ groups which have provided access to financing for many people on low incomes, particularly women.
- **Social safety nets and safety nets for firms.** When designed well, these can reduce the costs of shocks and, by reducing risks, facilitate more investment. For example, government mechanisms to maintain and enhance access to credit when private credit dries up at times of crises may help protect firms’ investment and hence jobs.
- **Equality.** Too much inequality undermines macroeconomic resilience because it depresses aggregate demand, stimulates conspicuous consumption, leads to excessive risk-taking in financial markets, entrenches special interests that delay policy reforms, impedes counter-cyclical measures and affects the operating of institutions.<sup>26</sup>

<sup>25</sup> Commission on Growth and Development (2008) *The Growth Report*. Washington, DC: Commission on Growth and Development.

<sup>26</sup> Vandemoortele, M. (2010) ‘Does Equity Reinforce Macroeconomic Resilience?’ PEGNet Conference on Policies to Foster and Sustain Equitable Development in Times of Crisis.

## 3. The Landscape of Existing Indices

In this section, we examine the landscape of existing indices to assess the extent to which change management capabilities are currently being measured. Appendix 4 analyzes various existing indices in further detail. For each index, it reviews:

- Aims and objectives of the index – which vary considerably in terms of the issues being captured, the audience and the intended use and impact
- Country coverage – which varies from one country to over 200
- Components or broad issues being measured by the index – which vary depending on the overall focus and aim of the index
- Construction/technical aspects – which discusses the indicators contained within each index in more detail and describes how they are constructed and aggregated
- Data – which looks at data sources, and whether they are quantitative, qualitative or perceptions data, etc.
- Comments – including the potential value of the index, or its components, in terms of measuring capability to manage change, or as a potential component of a new Capability Index, and some comments on the methodology

**For the detailed results of the assessment of nearly 30 indices, please go to <http://www.odi.org.uk/resources/download/5246.pdf>**

### 3.1 Index Objectives

There are a number of indices aimed at measuring vulnerability, or examining various dimensions (economic, environmental, social, etc.). For example, the Commonwealth Secretariat's Composite Vulnerability Index (CVI) and the UN Economic Vulnerability Index (EVI) measure the vulnerability of countries to economic and natural shocks, whereas the South Pacific Applied Geoscience Commission (SOPAC) Environmental Vulnerability Index measures a country's vulnerability to environmental changes. However, with the exception of the Economic Resilience Index, most of these indices focus on measuring the exposure of countries to shocks, not a national ability to cope with them.

There are other indices with other objectives, such as measuring the competitiveness of a country (e.g. the World Economic Forum (WEF) Global Competitiveness Index (GCI), Competitive Industrial Performance Index or Trade Performance Index); how well a country as a whole is participating in creating and using technology (e.g. the Technology Achievement Index); or the effect of SBRs on growth (e.g. the SBR Index), etc.



Indices have been used in various ways:

- Some have been used to facilitate the benchmarking and ranking of countries (e.g. the UN EVI allows for the identification of least-developed countries (LDCs); the World Bank's Human Development Index allows for the ranking of countries by level of human development; and the World Bank's Trade Indicators are rankings designed to benchmark trade policy and performance).
- Some have been used as a baseline for cross-country and/or cross-sectoral performance comparison (e.g. the Yale University Environmental Sustainability Index and the Environmental Performance Index allow for a comparison of countries' ability to protect the environment over time).
- Some have been used as the basis to offer guidelines for decision-making (e.g. the Prevalent Vulnerability Index (PVI) and the Inter-American Development Bank (IADB) Risk Management Index (RMI) which suggest the risk factors of public policies or actions should be reduced in order to diminish vulnerability and maximize resilience, whereas the Performance Logistics Index helps countries develop logistics reform programs).
- Some identify best practice (e.g. the Environmental Performance Index identifies policies producing good results in terms of environmental protection, whereas the Country Policy and Institutional Assessment (CPIA) assesses the quality of policy and institutions in fostering areas such as poverty reduction and sustainable growth).
- Some have been used to monitor changes over time (e.g. the Polity IV Project is used to monitor a country's regime changes over time, whereas the World Bank's Ease of Doing Business Report monitors patterns in business regulation).

A new Capability Index could be used in all of the above ways, with the primary objective of strengthening countries' capability to manage change.

## 3.2 Country Coverage

Current indices vary considerably in terms of country coverage. Some cover only one country (e.g. the Local Vulnerability Index, for South Africa) or very few countries (e.g. the Environmental Vulnerability Index, for Tuvalu, Australia and Fiji), while others cover more than 200 countries (e.g. the SOPAC Environmental Vulnerability Index, for 234 countries, and the World Bank Worldwide Governance Indicators (WGI), for 212 countries).

Many of the indices cover both developed and developing countries, but a specific focus solely on developing countries is rare, with the exception of the Commonwealth Secretariat's CVI, the UN EVI, and the World Bank's CPIA. Among these indicators, the EVI has a narrow country coverage (65 countries), whereas the CVI and the CPIA have broader country coverage, accounting for 111 and 127 countries, respectively.

There are also indices that cover a small number of developing countries in one specific developing region: the SBR Index refers to 20 countries in Africa, whereas the PVI and the RMI cover 14 and 13 countries in Latin America and the Caribbean, respectively. Some indices focus on a special group of developing countries, such as the Commonwealth Secretariat's CVI and Economic Resilience Index and the SOPAC Environmental Vulnerability Index, with respect to small states and small island developing states.

A new Capability Index would ideally have wide coverage of developing countries in different regions around the world.

### 3.3 Index Components

To analyze the indices, we have used three categories of indicators, reflecting the three broad components of capability to manage change discussed in Section 2: economic (including the macro and/or the micro dimension); governance/institutional; and social.

However, the range of dimensions taken into account differs greatly among different indices, depending on their objectives. Some indices, such as the Economic Resilience Index, the PVI, the WGI and the CPIA have a wide scope. Others, such as the CVI and the SOPAC Environmental Vulnerability Index, cover a narrow range of dimensions, focusing only on macroeconomic and environmental dimensions, respectively.

A focus on the financial dimension is missing in most of the indicators. From approximately 30 surveyed indicators, only six (i.e. the Local Vulnerability Index, the RMI, the GCI, the Ease of Doing Business Report, the WGI and the CPIA) take into account certain financial aspects, such as access to financial systems, financial protection and financial market development.

Appendix 4 provides a summary of the indicators available under each of the categories (economic, governance and social) for each index. It shows that relatively few indices cover all three dimensions adequately with wide country coverage.

The indices that do capture some capability-related measures in all three categories, and could contribute most to the new Capability Index, are the WGI, the CPIA and the GCI. Appendix 3 reviews in more detail the characteristics of these three indices in terms of capturing the various dimensions of capability to manage change.

## 3.4 Construction and Technical Aspects

There is an important distinction between ‘input-oriented’ and ‘output-oriented’ data. An input-oriented indicator is one that focuses on policy and other actions that determine an outcome, whereas an output indicator is one that measures the outcome itself. For example, an input indicator of trade might constitute a measure of trade policymaking institutions and rules, whereas an output indicator measures trade performance, such as the volume of goods traded.

As previously noted, a measure of the underlying capabilities of a country to manage change will by definition need to be based on input indicators. However, most existing indices rely mainly on output indicators.

A discussion of how the various indicators are aggregated to construct each overall index is included in Appendix 4.

## 3.5 Data and Types of Indicators

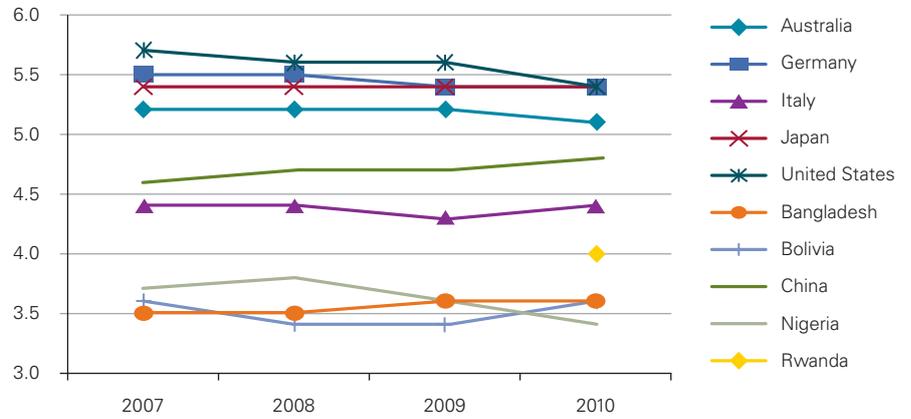
There are various sources of data used for the indices, including secondary data obtained from the World Bank, International Monetary Fund (IMF) etc., and primary data obtained from national surveys, or expert surveys, etc. Aggregating different sources of data in a meaningful way can be challenging.

In addition, data collection involves familiar problems that many researchers dealing with quantitative analysis highlight: inconsistency across countries, lack of completeness, etc. Moreover, data from surveys can be biased because they can include subjective perceptions.<sup>27</sup>

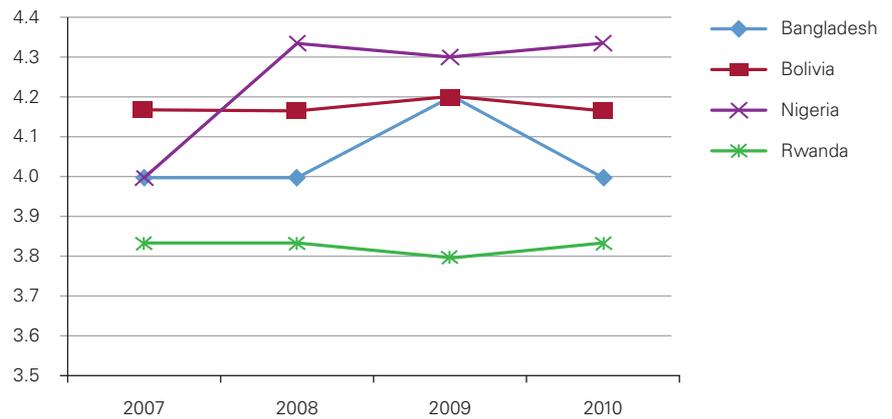
Figures 2–4 provide the relative rankings of a set of countries across the three aforementioned indices, and show some interesting differences. Figure 2 shows the overall country score on the Global Competitiveness Index, (the score varies from 5.63 for the top performer in 2010 which was Switzerland, to 2.73 for the worst performer which was Chad). Figure 3 shows the scores for the CPIA economic management indicator, where the higher the number is, the better the performance. Figure 4 shows scores for the government effectiveness indicator of the WGI, which can have values ranging from negative (very poor performance) to positive (good performance).

<sup>27</sup> Lall, S. (2001) *Competitiveness, Technology, and Skills*. Cheltenham: Edward Elgar.

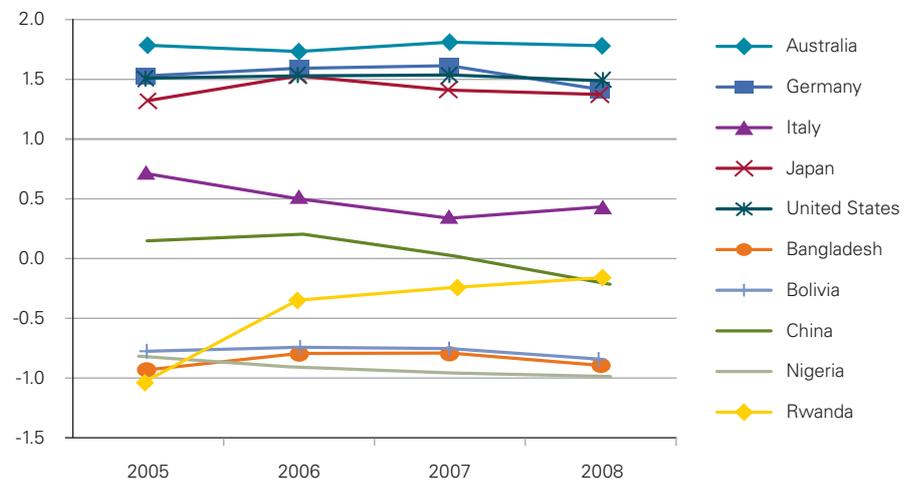
**Figure 2: World Economic Forum (WEF) Government Competitiveness Index (GCI) – overall country scores**



**Figure 3: Country Policy and Institutional Assessment (CPIA) – economic management indicator scores**



**Figure 4: Worldwide Governance Indicators (WGI) – government effectiveness scores**



Comparing the 2008 results for each indicator shows that of the developing countries sampled, Nigeria performed worst (relative to the other countries) in the WGI, but best in the CPIA, while Rwanda performed worst in the CPIA, but best in the WGI. China performs relatively well on the WEF, outperforming Italy, but less well on the WGI, scoring lower than Rwanda. The various indices clearly pick up different dimensions of performance overall, illustrating the value of combining different indices to focus on different aspects of country performance and capability. They can provide varied and valuable information to inform policy-making.

## Summary from Review of Existing Indices

Existing indices do not fully capture the various dimensions of capability to manage change. One or two focus on resilience and vulnerability issues, but neglect to look at these in terms of capabilities. Others do not focus on resilience, but do contain indicators that could be useful as sources of data, or to provide insight on how to capture certain capabilities which are of interest.

The closest match to the proposed Capability Index is the Commonwealth Secretariat's Economic Resilience Index. This index was calculated for 86 developed and developing countries, published in 2008, but it is not clear whether any regular continuation of the index is planned. The Economic Resilience Index has four broad components: 1) macroeconomic stability; 2) microeconomic market efficiency; 3) governance; and 4) social development. These components mirror the factors suggested for inclusion in the Capability Index. However, the data used to measure these four dimensions are different: more output-focused and more limited than would be required to create a 'true' Capability Index. For example, quality of governance is measured using various indicators of the quality of the legal framework, rather than broader measures of government capability, and as such does not capture the wider policy capability dimensions. Similarly, macroeconomic stability is measured using output indicators (for example the fiscal deficit, unemployment, inflation rates and debt levels), rather than a measure of the quality of the policy framework itself.

There are currently a number of vulnerability indices, such as the Commonwealth Secretariat's CVI and the UN's EVI. However, these focus more on measures of vulnerability, including output measures, such as level of export diversification of the economy, the small economic size, economic remoteness, share of the population affected by natural disasters, etc. They do not measure the capabilities of a country, and how these enable the country to manage change.

Other existing indices contain some indicators of relevance, but without adequate coverage of the full range of issues. The creation of a new Capability Index could draw on these indices as a starting point. The IADB's RMI, the UN Conference on Trade and Development (UNCTAD) Innovation Capability index and the Yale University Environmental Sustainability Index, all focus on specific dimensions of capabilities, but by themselves do not provide a sufficiently wide range of data to capture all the dimensions of capability.

Some existing indices have a broad focus, capturing a wide variety of indicators, from which a more narrowly defined set of capability-related indicators could be calculated. These include the WEF GCI and the World Bank's WGI and CPIA, all three of which have wide country coverage and are collected on a regular basis. However, none of these focus specifically on capability, or fully capture all of the dimensions of capability.

There seems to be a gap in what the current information and indices tell us about capability to manage change, and thus there is a need for a new Capability Index. As we have seen, there are many different indicators that could be used and aggregated to develop a new index based on existing data. This could be supplemented by new data collected at the country level, capturing dimensions of capability for which no other suitable measures of capability currently exist.

Appendix 3 identifies the various indicators captured under the three most relevant and potentially useful indices referred to above (the WEF GCI, the World Bank's WGI, and the CPIA). It suggests gaps in the information available from these three indices, which would need to be filled, either through the appropriate use of other existing variables and indicators or through an in-country primary research/fact-gathering exercise or an expert survey:

- Exchange rate flexibility – could be obtained through in-country fact gathering
- Strength of automatic stabilizers – could be obtained through in-country fact gathering
- R&D policies – could perhaps be obtained through existing indicators, otherwise through in-country fact gathering or expert survey
- Effectiveness of state-business relations – could be obtained through expert survey
- Policies that may contribute to economic diversification, e.g. industrial policies, SEZs etc. – could be obtained through in-country fact gathering or expert survey
- Social safety nets for households – could perhaps be obtained through existing indicators, otherwise through in-country fact gathering or expert survey
- Safety nets for firms affected by economic shocks – could be obtained through in-country fact gathering or expert survey
- Effectiveness of state-business relations – could be obtained through in-country fact gathering or expert survey
- Risk management capabilities – could be obtained through existing indicators, otherwise through in-country fact gathering or expert survey
- Entrepreneurship – could perhaps be obtained through existing indicators, otherwise through in-country fact gathering or expert survey
- Family/community support networks – could be obtained through expert survey

## 4. Conclusion



The various crises that have hit developing countries in recent years, the opportunities and risks created by globalization, and the future threats and opportunities associated with climate change, have all focused attention on the importance of managing economic shocks and structural changes effectively, and taking advantage of new opportunities. The ability of a country to respond to and manage change effectively will play an important role in determining its economic prospects, both in the short and long-term. Understanding the capability of a country to manage these different types of change is critical.

The Overseas Development Institute (ODI) researchers, in collaboration with KPMG International, examined the various types of capabilities that may determine a country's ability to manage change to its own advantage, and categorized them into three broad groups: 1) economic capabilities – relating to economic policies and frameworks; 2) governance and institutional capabilities – relating to the capacity of government and the institutional arrangements that have been established; and 3) social capabilities – relating to the characteristics of a society, such as literacy, social support networks and equity.

While there are many existing indices which capture some relevant factors, there is none which brings together all the required factors needed to examine a country's overall capability to manage change. The WEF's Global Competitiveness Index, the World Bank Governance Indicators, and the World Bank's Country Poverty Impact Assessment all provide a range of indicators that could be drawn on to examine the capability to manage change, but alone do not capture all the relevant and important aspects of change management.

The conclusion reached is the need to develop a new Capability Index, which would measure these underlying capabilities. This would allow countries to be benchmarked over time; signal which countries are better prepared to cope with change; help governments and donors spot potential future problems; inform policy in developing countries; and help donors target and prioritize their assistance accordingly. The index could be tested, refined and improved over time, measuring the effectiveness of policy responses to events as they unfold.

Experience shows that indices can be very effective in focusing policymakers' attention on an issue and encouraging improvement. Countries often cite improvements in their rankings in the World Bank's Doing Business index as evidence of their commitment to making the country a better place to do business.

KPMG and ODI intend to develop a new Capability Index, which will help build greater understanding of this crucial issue, and enable countries to improve their management of change in an increasingly uncertain world, to generate growth and reduce poverty.

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# Appendix 1: Glossary of Terms

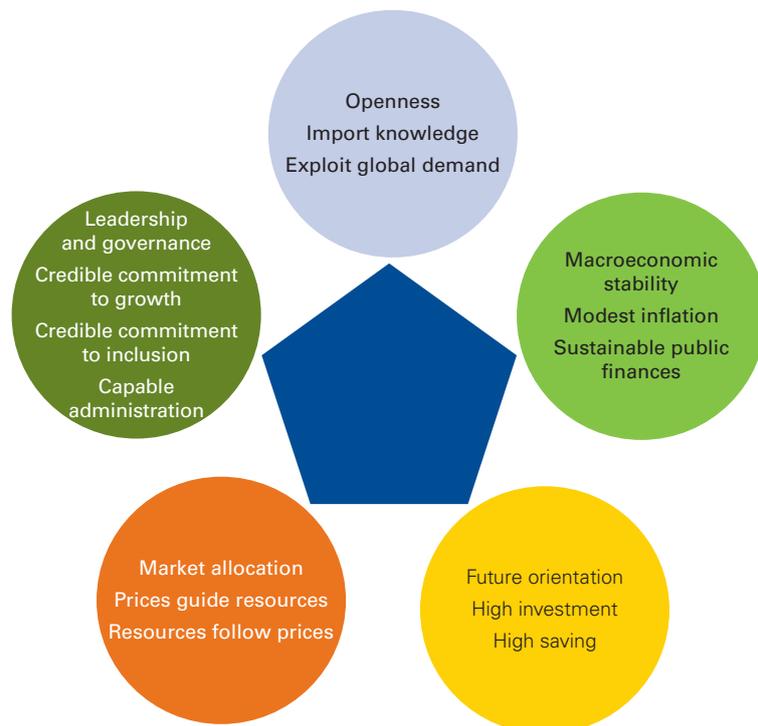
External shocks	Temporary, short-term changes in the external environment.
Structural change	Long-term, widespread transformation in the fundamental make-up of the economy.
Capability	The ability to perform actions, e.g. to deal with a shock or to promote structural change.
Resilience	Capability of a country to cope with shocks.
Vulnerability	Susceptibility to the impact of a shock, determined by the exposure to a shock minus the resilience of a country.

## Appendix 2: The Growth Report

The Commission for Growth and Development report identifies five factors behind 13 country case studies of successful growth:

- They fully exploited the world economy
- They maintained macroeconomic stability
- They achieved high rates of saving and investment
- They let markets allocate resources
- They had committed, credible and capable governments<sup>28</sup>

The figure below shows the key factors



Source: Commission for Growth and Development (2008).

<sup>28</sup> Commission on Growth and Development (2008) *The Growth Report*. Washington, DC: Commission on Growth and Development.

# Appendix 3: Comparing the WEF Global Competitiveness Index (GCI), World Bank CPIA, and World Bank Worldwide Governance Indicators (WGI)

## The WEF Global Competitiveness Index (GCI)

### 1. The extent to which the index measures the capability of a country to cope with and respond to change

The aim of the WEF GCI is to measure countries' competitiveness, but in doing this it captures a wide variety of capability-related indicators that might be useful in the creation of an index that measures the capabilities of a country to cope with and respond to change.

### 2. Coverage of developing countries in different regions

The WEF GCI covers 139 countries, including developed, emerging and developing economies.

### 3. Dimensions of capability captured (macroeconomic, microeconomic, financial, social, governance, institutional, environmental)

The WEF GCI has a wide scope. It includes components drawn from macroeconomic, microeconomic and financial dimensions. It is more limited in terms of indicators that are relevant to change management capability in governance/institutional and social categories. Also, there are no environmental indicators.

### 4. Weighting procedure for the aggregation of single indices

To calculate the aggregated index, weights for groups of indicators are different for developing, emerging and developed countries. For developing countries, the highest weight is given to 'basic requirement indicators,' for emerging countries to 'efficiency enhancers' and for developed countries to 'innovation drivers.' This choice is made on the assumption that different indicators are more or less important according to a country's stage of development and weights are estimated according to a linear regression between GDP per capita and indicators. The weights of pillars within each category ('basic requirements,' 'efficiency enhancers' and 'innovation drivers') are decided exogenously by WEF.

### 5. Input vs. output-oriented indicators

This index includes inputs and outputs, as it investigates drivers (basic requirements, efficiency enhancers and innovation enhancers) expressing countries' capability of competing, as well as competitiveness itself.

### 6. Consistency between primary/secondary data and data from surveys and experts

Data sources are international organizations, national sources and a global firms' survey. Data from the global firms' survey are collected through a survey of firms around the world and are organized on a scale of one to seven. Data from international organizations and national sources are put on a scale of one to seven as to be comparable with data from the survey.

## The World Bank Country Policy and Institutional Assessment (CPIA)

### 1. The extent to which the index measures the capability of a country to cope with and respond to change

The CPIA takes into account a wide variety of capability-related indicators that allow assessment of the ability of a country to promote sustainable growth, poverty reduction and effective use of development assistance.

### 2. Coverage of developing countries in different regions

The CPIA has a specific focus on developing countries and its country coverage is quite broad, accounting for 127 countries (i.e. all countries eligible to borrow from the World Bank's International Bank for Reconstruction and Development (IBRD) and International Development Association (IDA)).

### 3. Dimensions of capability captured (macroeconomic, microeconomic, financial, social, governance, institutional, environmental)

The CPIA captures a wide variety of indicators, especially related to the economic and governance/institutional dimensions of change management capability. On social dimensions the indicators are limited. However, the data are not necessarily captured in a way that is most useful in terms of identifying change management capabilities. In addition, a focus on the environmental aspects is missing.

### 4. Weighting procedure for the aggregation of single indices

The CPIA groups 16 criteria into four clusters that are weighted equally to generate the overall rating. Within each cluster, all criteria receive equal weight, although components within a criterion may be weighted differently. The overall score is obtained by calculating the average score for each cluster, and then by averaging the scores of the four clusters.

### 5. Input vs. output-oriented indicators

The input-oriented approach is predominant in this index, as 16 criteria represent drivers of institutional strength rather than institutional strength itself.

### 6. Consistency between primary/secondary data and data from surveys and experts

This index is calculated on the basis of quantitative and categorical variables. Consistency is obtained by normalizing variables on a one to six scale representing the score for each criterion.

## World Bank Worldwide Governance Indicators (WGI)

### 1. The extent to which the index measures the capability of a country to cope with and respond to change

The aim of the WGI is to measure governance defined as ‘the traditions and institutions by which authority in a country is exercised.’<sup>29</sup> It does not focus specifically on change management capabilities.

### 2. Coverage of developing countries in different regions

The WGI cover 212 countries including both developing and developed economies.

### 3. Dimensions of capability captured (macroeconomic, microeconomic, financial, social, institutional, environmental)

The WGI have a broad scope focusing on several different aspects of the governance dimension: voice and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law, and control of corruption. Thus it provides some useful economic and governance/institutional indicators of change management capability. However, important non-institutional aspects of the economic, financial, and environmental dimensions are not taken into account, and it is also very limited in terms of indicators of social capability.

### 4. Weighting procedure for the aggregation of single indices.

By using an unobserved components model 441 individual variables on governance perceptions are aggregated into six key components. These aggregate indicators are weighted averages of the underlying data, but data are treated to extract-only information which is strictly related to governance and to exclude measurement errors.

### 5. Input vs. output oriented indicators

The WGI use input indicators, as they investigate the broad dimensions of governance which include, ‘(a) the process by which governments are selected, monitored and replaced; (b) the capacity of the government to effectively formulate and implement sound policies; and (c) the respect of citizens and the state for the institutions that govern economic and social interactions among them.’<sup>30</sup>

### 6. Consistency between primary/secondary data and data from surveys to experts.

The data used stem from 35 different sources including surveys of firms and individuals, assessments of commercial risk rating agencies, non-governmental organizations, multilateral aid agencies and other public sector organizations. Data sources are provided by 33 different organizations from around the world. The rescaling of data into common units is obtained by the Unobserved Component Model technical procedure.

<sup>29</sup> Kaufmann, Kraay, & Mastruzzi (2001) “The Worldwide Governance Indicators: Methodology and Analytical Issues” World Bank Policy Research Working Paper No. 5430

<sup>30</sup> Kaufmann, Kraay, & Mastruzzi (2001) “The Worldwide Governance Indicators: Methodology and Analytical Issues” World Bank Policy Research Working Paper No. 5430

### Comparing the variables relevant to managing change:

This chart lists the indicators/variables captured by each index which are most relevant to addressing the key factors in capability to managing change.

	WEF GCI	World Bank CIA	World Bank WGI
<b>Economic Capabilities</b>			
Sound macroeconomic framework, fiscal space to cope with changes, flexible exchange rate, strength of automatic stabilizers, etc.	<ul style="list-style-type: none"> <li>• Government budget balance</li> <li>• National savings rate</li> <li>• Government debt</li> </ul>	<ul style="list-style-type: none"> <li>• Macroeconomic management</li> <li>• Fiscal policy</li> <li>• Debt policy</li> </ul>	<ul style="list-style-type: none"> <li>• Quality of budget management</li> </ul>
Extent to which the right economic conditions are in place for investment (e.g. business environment, SBRs, access to finance, competitive environment, tax rates and incentives)	<ul style="list-style-type: none"> <li>• Burden of government regulation</li> <li>• Number of procedures required to start a business</li> <li>• Time required to start a business</li> <li>• Availability of financial services</li> <li>• Affordability of financial services</li> <li>• Ease of access to loans</li> <li>• Venture capital availability</li> <li>• Restriction on capital flows</li> </ul>	<ul style="list-style-type: none"> <li>• Business regulatory environment</li> <li>• Property rights and rules-based governance</li> </ul>	<ul style="list-style-type: none"> <li>• Bureaucracy hindering business activity</li> <li>• Price controls</li> <li>• Ease of starting a business</li> <li>• Enabling conditions for rural financial services development</li> <li>• Price controls affect on pricing of products in most industries</li> <li>• Access to capital markets (foreign and domestic)</li> <li>• Ease of doing business as a competitive advantage</li> </ul>
Extent to which policies are in place to promote innovation and engagement with science and technology: intellectual property rights, R&D policies	<ul style="list-style-type: none"> <li>• Intellectual property protection</li> <li>• Availability of latest technologies</li> <li>• Firm-level technology absorption</li> <li>• FDI and technology transfer</li> <li>• Capacity for innovation</li> <li>• Quality of scientific research institutions</li> <li>• Company spending on R&amp;D</li> <li>• University–industry collaboration in R&amp;D</li> <li>• Availability of scientists and engineers</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Intellectual property rights protection</li> <li>• Patent and copyright protection/enforcement</li> </ul>
Employment policies (e.g. skills, education and training programs, flexible labor markets)	<ul style="list-style-type: none"> <li>• Quality of the educational system</li> <li>• Primary, secondary and tertiary education enrolment rates</li> <li>• Quality of math and science education</li> <li>• Quality of management schools</li> <li>• Local availability of research and training services</li> <li>• Extent of staff training</li> <li>• Flexibility of wage determination</li> <li>• Hiring and firing practices</li> <li>• Brain drain</li> </ul>	<ul style="list-style-type: none"> <li>• Building human resources</li> </ul>	<ul style="list-style-type: none"> <li>• Quality of public schools</li> <li>• Satisfaction with education system</li> <li>• Labor regulations impact on business growth</li> <li>• Labor regulations hindering business activities</li> </ul>

	WEF GCI	World Bank CIA	World Bank WGI
Policies that may contribute to economic diversification (e.g. industrial policies, SEZs etc.)	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>
Openness to trade and foreign investment	<ul style="list-style-type: none"> <li>• Prevalence of trade barriers</li> <li>• Trade tariffs</li> <li>• Prevalence of foreign ownership</li> <li>• Business impact of rules on FDI</li> </ul>	<ul style="list-style-type: none"> <li>• Trade policy</li> </ul>	<ul style="list-style-type: none"> <li>• Export regulation</li> <li>• Import regulation</li> <li>• Import barriers/cost of tariffs as obstacle to growth</li> <li>• Non-resident business ownership restrictions</li> <li>• Non-resident equity ownership restrictions</li> <li>• Trade policy and foreign exchange regime</li> <li>• Customs and trade regulations impact on business growth</li> </ul>
Social safety nets for households	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Social protection and labor</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>
Safety nets for firms affected by economic shocks	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<b>Government/Policy/Institutional Capabilities</b>			
Quality of bureaucracy, numbers of staff	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Quality of budgetary and financial management</li> <li>• Quality of public administration</li> </ul>	<ul style="list-style-type: none"> <li>• Government economic policies adapting to changes in the economy</li> <li>• Effectiveness of national parliament/congress as a law-making and oversight institution (Global Competitiveness Report)</li> <li>• Government ineffectiveness</li> <li>• Institutional failure (Global Insight, Global Risk Service)</li> <li>• Quality of bureaucracy/ institutional effectiveness (Economist Intelligence Unit (EIU))</li> <li>• Capacity of political authorities to implement reforms</li> <li>• Bureaucratic quality</li> <li>• Policy consistency and forward planning</li> <li>• Quality of public administration</li> <li>• Effective implementation of government decisions</li> </ul>
Effectiveness of SBRs	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>

**Comparing the variables relevant to managing change: (continued)**

	WEF GCI	World Bank CPIA	World Bank WGI
Financial regulatory capabilities	<ul style="list-style-type: none"> <li>• Regulation of securities exchanges</li> </ul>	<ul style="list-style-type: none"> <li>• Financial sector</li> </ul>	<ul style="list-style-type: none"> <li>• Banking regulation does not hinder competitiveness</li> </ul>
Risk management capabilities; environmental policy capabilities	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Policies and Institutions for environmental sustainability</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental regulations hurt competitiveness</li> </ul>
<b>Social Capabilities</b>			
Entrepreneurship	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>
Family/community support networks	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>
Information/media/knowledge dissemination/ literacy	<ul style="list-style-type: none"> <li>• Internet access in schools</li> <li>• Internet users</li> <li>• Internet bandwidth</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Media (Freedom House)</li> </ul>
Equity	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>

## Appendix 4: Summary of Coverage of Existing Indices

Indicator	Economic capabilities	Governance/ institutional capabilities	Social capabilities	Number of developing countries covered
<b>Global Competitiveness Index</b>	<i>many</i>	<i>limited</i>	<i>limited</i>	<i>many</i>
<b>Country Policy and Institutional Assessment</b>	<i>some</i>	<i>some</i>	<i>limited</i>	<i>many</i>
<b>Worldwide Governance Indicator</b>	<i>many</i>	<i>many</i>	<i>limited</i>	<i>many</i>
<b>Composite Vulnerability Index</b>	–	–	–	<i>many</i>
<b>Economic Resilience Index</b>	<i>limited</i>	<i>some</i>	–	<i>some</i>
<b>Composite Global Vulnerability Index</b>	<i>limited</i>	–	–	<i>many</i>
<b>Economic Vulnerability Index</b>	–	–	–	<i>some</i>
<b>Local Vulnerability Index</b>	<i>limited</i>	<i>limited</i>	–	<i>limited</i>
<b>Prevalent Vulnerability Index</b>	<i>limited</i>	<i>limited</i>	<i>limited</i>	<i>limited</i>
<b>Risk Management Index</b>	<i>some</i>	<i>some</i>	<i>some</i>	<i>limited</i>
<b>Environmental Sustainability Index</b>	<i>limited</i>	<i>limited</i>	–	<i>many</i>
<b>Environmental Performance Index</b>	–	<i>limited</i>	<i>limited</i>	<i>many</i>
<b>Environmental Vulnerability Index</b>	<i>limited</i>	<i>limited</i>	–	<i>many</i>
<b>Polity IV Project</b>	–	<i>some</i>	–	<i>many</i>
<b>Performance Logistics Index</b>	<i>limited</i>	–	–	<i>many</i>
<b>Human Development Index</b>	–	–	–	<i>limited</i>
<b>Innovation Capability Index</b>	<i>limited</i>	–	–	<i>some</i>
<b>Technology Achievement Index</b>	–	–	–	<i>some</i>
<b>Competitive Industrial Performance Index</b>	–	–	–	<i>some</i>
<b>Ease of Doing Business</b>	<i>some</i>	<i>some</i>	–	<i>many</i>
<b>Herfindahl Index</b>	–	–	–	<i>n.a.*</i>
<b>Capital Control Index</b>	<i>limited</i>	–	–	<i>some</i>
<b>Enabling Trade Index</b>	<i>limited</i>	<i>limited</i>	–	<i>some</i>
<b>Trade Performance Index</b>	–	–	–	<i>many</i>
<b>Trade Indicators</b>	<i>limited</i>	<i>limited</i>	–	<i>many</i>
<b>Environmental Vulnerability Index</b>	–	<i>limited</i>	–	<i>limited</i>
<b>Vulnerability-Resilience Indicator</b>	–	–	–	<i>limited</i>
<b>State-Business Relations Index</b>	–	<i>limited</i>	–	<i>limited</i>

Notes: The classification 'many', 'some' and 'limited' associated with the economic, governance/institutional and social capabilities refers to the number of input factors related to change management capabilities that each indicator takes into account; the assessment is based on subjective criteria. The number of developing countries covered is classified as 'many' if it is greater than 100, 'some' if it is in the range of 50 to 100 and 'limited' if it is smaller than 50.

\* The number of countries covered is heterogeneous across policy and academic studies using the Herfindahl index.

**Detailed results of the assessment of the nearly 30 indices are available at <http://www.odi.org.uk/resources/download/5246.pdf>**

Source: Authors' elaboration on the basis of different sources.

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