

# Science, Technology and Innovation Indicators Lessons from the Development Experience in Africa

Editors

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# Chapter 3

## Building and Catching-up in STI Capabilities: Lessons from Indicator Assessment of Asia Pacific for Africa<sup>1</sup>

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### 1. Introduction

**B**uilding Science, Technology and Innovation (STI) capabilities is an important policy agenda across the world. It is not only important for promoting economic development but also to drive the sustainable

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development agenda (SDGs). Additionally, less developing countries (LDCs) also depend largely on resource-based industries to propel their growth and development. While the performance of the resource-based industries provides much needed economic and social benefits, at the same time, it has negative implications on the environment and even on its social well-being. Indeed, dependence on resource-based industries without any technological progress also limits the economic and social benefits in terms of returns gained from the progress of these sectors, whereby the sectors are largely low in productivity and are highly labour-intensive. The challenge seems to improve the existing resource-based sectors as well as to diversify the economic structure to move into more technology and knowledge-intensive sectors without compromising or improving the current economic and social benefits and, at the same time, improvising the environmental benefits. To do this, it requires the integration of STI capabilities in the framework to move the existing sectoral performance as well as to diversify the economy with the emergence of new sectors.

Nevertheless, in LDCs, to make any important policy interventions, firstly, it requires knowing the status of the STI development as well as understanding how to make STI more effective in achieving the economic goals. Research shows that with a more informed decision, government intervention can make a difference to correct the market failures. This chapter is positioned to illustrate how policymakers could use the existing STI indicators to assess the current position of their National Innovation System and further identify their weaknesses and strengths. In doing so, the chapter illustrates the case of Asia Pacific and later draws lessons for Africa. In specific, the chapter gauges the overall STI capabilities of the selected Asia-Pacific countries<sup>1</sup>. Common indicators of STI are used to gauge the STI capabilities within the National Innovation System (NIS) (Freeman, 1995; Nelson, 1993; Lundvall, 1992). Countries with resource constraints can utilize these commonly available indicators, which is available for free, to make informed policy decisions.

The chapter aims to provide some insights on the following questions: