



United Nations
Educational, Scientific and
Cultural Organization

Sustainable
Development
Goals

Co-Designing Science in Africa

First steps in assessing the sustainability
science approach on the ground



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4. Co-designing knowledge systems for sustainable development in Kenya

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4.1. Introduction

In Kenya's endeavour to transition to an industrialized country, sustainable development is increasingly becoming an area of focus. Research in this area is gaining a lot of attention, with various policies now highlighting sustainability as a critical element. Further, other actors within the innovation system in Kenya – including the private sector, civil society and development partners – are championing sustainable development more overtly and focusing on more collaborative efforts to develop solutions tailored to local sustainability problems. This gradual but palpable shift in the collective psyche of the national innovation system in Kenya becomes crucial when sustainability challenges are exacerbated. Factors such as rising poverty levels and inequality, population growth, urbanization and rapid industrialization, if unchecked, will lead to further depletion of natural resources, deterioration of the environment and thus, quality of life.

In terms of culture, Kenya is a very rich country and, like many other African countries, has many different ethnic groupings, mainly the Bantu, the Nilotic and the Cushitic, Arabs, Indians and Europeans. The country's total land area covers 569,140 km² and the population as of April 2018 stands at 50,662,612.¹

Since independence, Kenya has pursued various pathways to development. To a large extent, efforts by the Kenyan government to meet the aspirations of pre- and post-independence generations have been inhibited by a preoccupation with crises, relief and drought engagement. In addition, the central planning and structural adjustment programmes adopted have failed to promote development management and achieve national development goals.

Following Kenya's adoption of the Sustainable Development Goals and Agenda 2063: The Africa We Want in the international arena, and the Constitution of Kenya 2010 and Kenya Vision 2030, local consensus is emerging on the need to adopt long-term perspectives as an appropriate framework for promoting sustainable development, and to involve multiple stakeholders in that endeavour. This perspective is evident in the legislation, policy objectives and strategies developed in various sectors in Kenya, with efforts to stimulate cross-sectoral collaboration at a nascent stage.

In considering new strategies to tackle this governance challenge or exploring new social or economic models of development, sustainability science, as discussed in the introductory chapter of this book, offers a potentially novel approach. Kenya, like many countries and regions in Africa and the rest of the Global South, features multiple knowledge systems that have implications for

research and education for sustainable development. These knowledge systems, if mobilized effectively, have the capacity to generate context-relevant knowledge that could effectively address local sustainability challenges.

Formal science and education systems modelled on the Western scientific approach are widely perceived as a fruitful avenue to generate new knowledge in this regard and thus have received a great deal of attention from policy-makers, academics and some practitioners. Accordingly, the Kenya national innovation system – as perceived by the National Commission for Science, Technology and Innovation (NACOSTI) and related policy actors – is modelled around research and innovation in the formal domain.

Experiential knowledge from the informal sector and from traditional knowledge systems, which are difficult to codify and measure, is somewhat overlooked and undervalued relative to the Western scientific approach. Yet, there is evidence that indigenous and local knowledge systems, which have been developed over a long period of time through experimentation, adaptation and coevolution, provide valid and useful theories, methods and practices for sustainable development. We assert that further progress towards understanding and tackling 'wicked problems' in the local and global context could be achieved by recognizing complementarities across these knowledge systems. Such an approach would provide new insights for sustainability science and how it can be mobilized in developing countries such as Kenya.

In this chapter, we briefly discuss the social, economic and environmental sustainability challenges that have been facing Kenya. We then highlight how national legislation, policies and strategies developed in different sectors address these sustainability challenges, while discussing the challenges of implementing these policies in the current context. Despite these challenges, most of them arising from deficiencies in the governance framework, the chapter shows that Kenya has invested considerable effort in developing legislation, policies and strategies that explicitly integrate sustainable development as a central national value and an explicit principle of governance.

The chapter subsequently maps Kenya's science, technology and innovation policy framework and the underlying national innovation system. Gaps in the system that inhibit its potential towards addressing sustainable development are identified. A key gap is the underdeveloped cooperation within and among existing knowledge systems/actors: inside industry, between firms, universities and research institutions, and between formal or 'Western' science and indigenous and local