



INNOVATION AFRICA

Emerging Hubs of Excellence



EDITED BY

Olugbenga Adesida • Geci Karuri-Sebina • João Resende-Santos

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Emerging Hubs of Excellence

As patron of the AIS, I am delighted about this book because for Africa there will be no better future without vibrant and developmental cultures, systems and institutions that actively leverage the innovativeness of our greatest asset: our people. This book shines a light of enquiry on some of what we have done in Africa at our best, and perhaps too at our worst when we have not managed to sustain or fully benefitate our innovation systems. It is an important contribution to our learning, reflection and action.

— *Dr Pedro Pires, Ex President, Republic of Cabo Verde (2001–2011) and 2011 Mo Ibrahim Leadership Laureate*

Innovation is a key enabler of development and structural transformation. At a time when Africa has bold aspirations through Agenda 2063, innovation is a must for the continent to confront challenges such as the ascendant demographic curve, green industrialization and domestic resource mobilization. The number of case studies presented in this book showcase Africa's ability as well as potential to research and offer solutions that will leave their mark. An exciting opportunity to make Africa the continent of the future is around the corner if we just pay attention to the messages of this book.

— *Carlos Lopes, Executive Secretary of the United Nations Economic Commission for Africa (UNECA)*

While acknowledging the many challenges, the diversity and richness of case studies that carry this book not only systematically show how Africa is indeed innovative in its own way, but also very skilfully demonstrates the fact that innovation goes beyond the technological. This is a must-read book for any serious innovation scholar and policy maker.

— *Professor Bitrina Diyamett, President, AfricaLics*

There is growing interest among African governments and international organizations for mobilizing innovation for development in Africa. But there is still a scarcity of knowledge on how innovation actually takes place in different contexts. This book helps close this knowledge gap. Edited by the organizers of the 2014 African Innovation Summit, it presents a number of case studies on innovation from four out of the five major regions of Africa. The case studies cover different sectors spanning from innovation in the use of mobile phones, in public administration, in cassava production and in heavy industry. The case studies add important specific insight and they are helpful in understanding the potential as well as the barriers for innovation.

— *Professor Bengt-Åke Lundvall, Aalborg University and Secretary General for Globelics*

Innovation Africa is an important and original contribution to our better understanding of "rising Africa." While recognizing the challenges faced, the book assesses the true assets of the continent for innovation and technological upgrading, based on a detailed analysis of illustrative case studies. The message is clear: the future of Africa lies in its ability to develop and nurture innovation and the potential is there. Calling for a distinctly new approach to innovation for the African continent, this book is a source of inspiration for policymakers, business leaders and the public at large.

— *Anne Miroux, Former Head of the UN Commission on Science and Technology for Development and Visiting Fellow, Emerging Markets Institute, Cornell University*

There is an imperative role for innovation in Africa's continued development. Innovation is not about waiting for a good idea to strike — it must be a deliberate practice and process to ensure that good ideas, including those emerging at local levels, are enabled by the right policies, and shaped for social and/or ecological benefits. Without being prescriptive, this timely book offers case studies that serve as detailed roadmaps to guide the way and is a welcome addition to any leader's toolkit.

— *Kippy Joseph, Associate Director for Innovation at The Rockefeller Foundation*

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INVESTOR IN PEOPLE

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Foreword

To embark on sustained economic transformation, African countries must engage more purposefully in producing knowledge and building innovation-driven societies that can compete in the new world economy. Africa is no longer the place it was in the past, with its destiny almost entirely driven by forces beyond its borders. The technological innovations taking place on the continent today offer the promise of transforming African countries from trading mainly in materials and commodities to trading in knowledge-intensive products. This is why the Ihaba's initiative that focuses on promoting innovation in Africa, including this book and the Africa Innovation Summit series, that were launched in Praia in Cabo Verde in 2012 are timely. By supporting these initiatives, we have demonstrated at the African Development Bank where our development focus really lies.

The case studies in this book show that while African countries have begun to take innovation seriously, few have fully established robust national ecosystems for innovation. It is important for African countries, to take advantage of the recent decade of high growth, to enhance investments in national innovation systems. It is the sure route to realizing sustainable socioeconomic development through investing in people; ensuring that development is broad-based; and, most importantly, investing in innovation.

Experience indicates that innovation only succeeds if countries are able to get three things right: ensuring a broad berth for

experiment and thinking differently, promotion of equal opportunity, which can boost the capabilities of households and communities, and creating an environment that rewards risk taking. The latter must, however, not be confused with rent seeking which has become quite prevalent in some countries. For innovation to flourish also requires that governments invest adequately in education, skills development, healthcare, food security, and access to water and sanitation services, and security.

Many African countries are building innovation-driven economies, as the case studies in this book illustrate. Success will, however, require a two-pronged approach. First, there is need for policy focus and efforts by all stakeholders at the national level. All must be engaged, and half-hearted attempts will fail. Second, steps must be taken at the regional and pan-African levels to give a real push to building national ecosystems for innovation. African countries must work together to address the key constraints to innovation on the continent. We simply have no alternative to broader collaboration if we wish to achieve Africa's agenda for structural transformation and socioeconomic development.

Dr. Donald Kaberuka
President
African Development Bank
Abidjan
July 2015

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A project such as this would not be necessary or possible if it were not for the dynamic innovators, entrepreneurs and industrialists who have been pushing frontiers on the continent, often under difficult circumstances. We salute these people and institutions, as we are looking to them for the lessons and opportunities to massively scale up African innovation and development systems towards positive and prosperous shared futures for Africa.

This initiative was an idea — a dream — which we pushed ahead with without any secured sponsorship. It is therefore a project that generally ran on passion, hope and sacrifice. In this regard, we especially want to recognise the case study authors who enthusiastically took up the call and selflessly put in the time and effort to produce their chapters with no guarantee of remuneration. Mammo, Neville, Erika, Will, Abiola, Gatune, Nisreen, George and Djeflat — thank you. You made this volume possible.

We also wish to acknowledge the peer reviewers who also generously gave of their time, intellect and experience to comment on the draft chapters and give guidance on improving them. For this, we thank: Dr Nal Abdelrasaq, Ms. Radhika Perrot, Dr John Ohiorhenuan, Dr Lindile Ndabeni, Dr Velaphi Msimang, Dr Diran Soumonni and Prof Alexandre Vera-Cruz.

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Finally, we recognise the publisher, Emerald for having faith in this somewhat unconventional project — neither entirely academic, nor industrial or popular. John Stuart gave this project a chance, and his professional guidance has been patient and sympathetic to our ideas and perspective. We hope that this effort is met with the success it deserves.

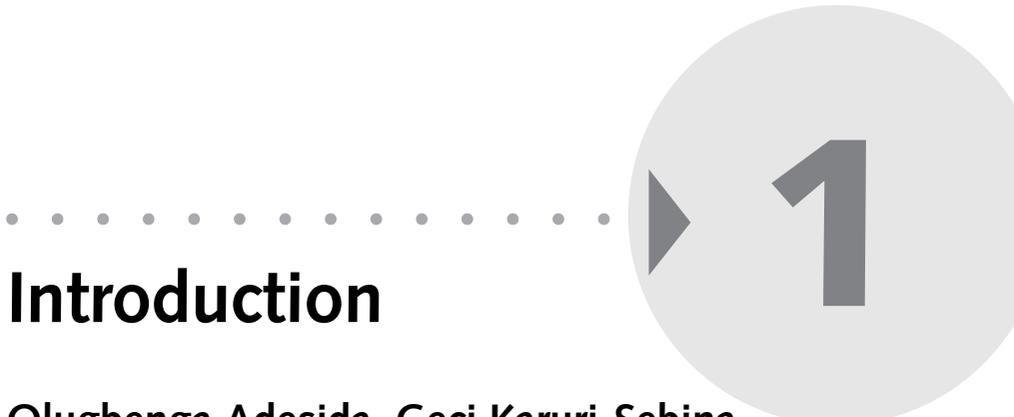
With Gratitude,
Olugbenga Adesida
Geci Karuri-Sebina
João Resende-Santos
Editors

Map



This map locates the case studies that are covered in this book:

- Algeria: Steel Sector
- Cabo Verde: eGovernment
- Egypt: Agricultural by-products
- Ghana: Industrial cluster
- Ghana/Nigeria: Cassava
- Kenya: Commodity Boards
- Kenya: Mobile technology
- Nigeria: Film industry
- Southern Africa (Botswana, Mozambique, Namibia, South Africa, Zambia): Innovation hubs (science and technology parks)



Introduction

Olugbenga Adesida, Geci Karuri-Sebina and João Resende-Santos

Africa is a creative, diverse, and dynamic continent. From inventive ancient civilizations, to adventurous nomads and traders, dark periods of occupation, ravage, brutalization and plunder, to tumultuous decades of “doing development” — Africa has somehow carried on. Following the brooding Afro-pessimism of the 1980s (the structural adjustment years) and 1990s (the lost decade), a new Africa has now been emerging in the popular imagination. Today, the conventional wisdom is that of an Africa rising; Africa as the new frontier and as an emerging market. Indeed, individual countries are growing at high rates. Certain economic segments are growing in economic strength and buying power. Individual people are inventing amazing technologies, others are becoming billionaires, and a few are even emerging as significant philanthropists and investors.

The question is: how does all of this scale up? In order for Africa to direct its promise and development to its own advantage, it must self-actualize by crafting and owning its narrative of the future (Ohiorhenuan, 2011). An important aspect of this narrative will be in how it nurtures, systematizes, and leverages its discrete potentials. This is the starting point for the *Innovation Africa* story.

This book is part of a larger agenda to promote Africa-wide dialogue on innovation and Africa’s structural transformation. The aim is to create a platform for interaction and collaboration, to

build consensus on the way forward, and to facilitate strategic actions among the stakeholders. This agenda comprises of a series of integrated initiatives, complementary to this publication. A second critical element of this program is the new, bi-annual *Africa Innovation Summit* — AIS (<http://www.africainnovationsummit.com>). The first session of the AIS was held in Praia, Cabo Verde, in 2014, and the next will take place in 2016. A third leg was an academic initiative actualized through a special issue of the *African Journal for Science, Technology, Innovation and Development* (<http://www.ajstid.com/>) entitled: “Building innovation-driven economies in Africa.” Together, the three activities form an integral part of a program to make innovation a key element of the development agenda in Africa.

As part of this larger effort, the book is designed to expose some of what is happening in the continent and to contribute ideas and knowledge to support policymaking and actions. We hope the cases presented achieve these objectives, as the book is not only about intellectual curiosity or simply meant to identify policy recommendations. Its main goal is to advocate actions. This publication is part of the knowledge dimension of the agenda to promote innovation in Africa. In this sense, the initial drafts of the cases informed the dialogue during the first AIS and we are hopeful that compiling these into book form will promote sharing of experiences and learning between African countries. This, we believe, will counter the tendency of African countries looking only to the West or East instead of to each other where the contexts and challenges are similar and therefore the opportunities to learn are greater. We also hope the book helps promote evidenced-based policymaking and actions to facilitate innovation and structural transformation in African countries.

Innovation Matters for Development

Innovation is not a word typically associated with the African continent. Africa, of course, is an incredibly diverse continent of over a billion people and 54 countries, comprising an astounding

variety in cultures, ethnicities, religion, climate, natural endowments, and so on. How can anyone make any one generalization or sweeping assertion in the context of such diversity of peoples, countries, or economic and sociopolitical conditions? As in every other continent, Africa is also bedeviled with wars, poverty, slums, dictatorships, terrorism, and human rights abuses — though in the case of Africa this tends to be the dominant lens applied. However, this same, complex Africa also has thriving democracies, high rates of economic growth, corporate empires, digital age technologies, and sprawling cities of glimmering towers and congested highways. The still-prevailing narrative and image of the continent, reproduced continually in globalized mass media, is a continent of poverty and strife. But an Africa of high growth innovation, and the challenges of development (and not only of underdevelopment) is also part of today's reality.

Africa has been characterized over the past decade not only by its fast growing economies but also by its pervasive array of socioeconomic challenges, such as high levels of poverty and inequality. As such, innovation in Africa must be understood in a holistic and grounded manner. As the collection of cases in this book demonstrates, Africa today is home to inventors and entrepreneurs, high- and low-end technological innovation, tinkerers, and dreamers. Poverty, inadequate social services, poor infrastructure, low agricultural productivity, preventable diseases, limited sanitation, and clean water also characterize the continent, but these are also precisely the everyday challenges that these African inventors, tinkerers, and dreamers are seeking to resolve. Africa needs all kinds of innovation. As these inventors, tinkerers, and innovation entrepreneurs dream up the next Google, so too must they address the most basic challenges faced in their communities and in their own daily lives.

Technological innovation is the key to an economy's productivity and growth, as economic theory tells us. Innovation is increasingly being accepted as an integral basis for achieving the sustainable development of our societies. Innovation practices across a range of domains — scientific, technical, technological, political, cultural, and cognitive — and learning capabilities are