HARVARD Kennedy School
JOHN F. KENNEDY SCHOOL OF GOVERNMENT

African Regional Economic Integration: The Emergence, Evolution, and Impact of Institutional Innovation

Faculty Research Working Paper Series

Calestous Juma
Harvard Kennedy School

Francis Mangeni
Harvard Kennedy School

January 2018

RWP18-003

The John F. Kennedy School of Government mourns the passing of Professor Calestous Juma, who passed away in December 2017. See https://www.hks.harvard.edu/announcements/hks-mourns-calestous-juma for further detail.

Visit the **HKS Faculty Research Working Paper Series** at:
https://www.hks.harvard.edu/research-insights/publications?f%5B0%5D=publication_types%3A121

The views expressed in the **HKS Faculty Research Working Paper Series** are those of the author(s) and do not necessarily reflect those of the John F. Kennedy School of Government or of Harvard University. Faculty Research Working Papers have not undergone formal review and approval. Such papers are included in this series to elicit feedback and to encourage debate on important public policy challenges. Copyright belongs to the author(s). Papers may be downloaded for personal use only.

SCIENCE, TECHNOLOGY, AND GLOBALIZATION

African Regional Economic Integration

The Emergence, Evolution, and Impact of Institutional Innovation

Calestous Juma

Francis Mangeni

HARVARD Kennedy School
BELFER CENTER
for Science and International Affairs

DISCUSSION PAPER 2018-01
JAUARY 2018

Science, Technology, and Globalization Project
Belfer Center for Science and International Affairs
Harvard Kennedy School
79 JFK Street
Cambridge, MA 02138

www.belfercenter.org

Statements and views expressed in this report are solely those of the authors and do not imply endorsement by Harvard University, the Harvard Kennedy School, or the Belfer Center for Science and International Affairs.

Design & Layout by Andrew Facini

Cover photo: A train returns from transporting ballast used in the construction of the Nairobi-Mombasa railway, and passes through a cut leading to an existing bridge that goes across a corner of Nairobi National Park in Nairobi, Kenya, November 23, 2016. (AP Photo/Ben Curtis)

Copyright 2018, President and Fellows of Harvard College
Printed in the United States of America

SCIENCE, TECHNOLOGY, AND GLOBALIZATION

African Regional Economic Integration

The Emergence, Evolution, and Impact of Institutional Innovation

Calestous Juma

Francis Mangeni

HARVARD Kennedy School
BELFER CENTER
for Science and International Affairs

DISCUSSION PAPER 2018-01
JAUARY 2018

Table of Contents

Introduction 1

1. Emergent Africa 5

2. Chaos and uncertainty: Africa far from equilibrium 9

3. Creativity, complexity, and irreversibility 17

4. Africa's divergent globalization 23

5. In the long run 29

Conclusion 35

A cargo container ship crosses the new section of the Suez Canal after the opening ceremony in Ismailia, Egypt, Aug. 6, 2015. (AP Photo/Hassan Ammar)

Introduction[1]

Africa is a continent of an apparent paradox. On the one hand, it is endowed with abundant natural resources that have defined its image and place in the global economy. But on the other hand, it consists of some of the poorest nations on earth. One would assume that, given the circumstances, newly independent African states would have aggressively sought to uplift their economic performance and improve the wellbeing of their people through adding value to their natural resources. Yet proposals for resource-led industrial transformation were not developed until much later in the evolution of Africa's economic integration.[2]

It is often argued that African countries with small markets should instead focus on exporting raw materials and using the revenue to import manufactured goods. But right from the beginning, African decolonization champions focused not so much on the material wealth of the continent, but on its political unification as a prerequisite for economic transformation. This outlook is engraved on the plinth of Ghana's first president, Kwame Nkrumah, outside Parliament House in Accra: "Seek ye first the political kingdom and all other things shall be added unto you." With its biblical derivation, the injunction has come to play an equally spiritual role in African political affairs. Underlying this vision was a deep commitment to the ideology of Pan-Africanism.

The first major indication that Africa was taking regional economic integration seriously came with the adoption of the Tripartite Free Trade Area (TFTA) Agreement in June 2015 in Egypt. The agreement covers 26 nations with a population of 720 million people and GDP of US$1.3 trillion. It covers the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), and the

1 This paper is drawn from our forthcoming book, *Emergent Africa: Evolution of Economic Integration.* We would like to thank Issa Baluch and the FIATA Logistics Academy for their support in making the book available through open access.

2 ECA. 2013. *Making the Most of Africa's Commodities: Industrializing for Growth, Jobs and Economic Transformation,* Economic Commission for Africa and African Union Commission, Addis Ababa.

Southern African Development Community (SADC) economic communities. The area of the TFTA is nearly twice the size of China or the United States, spanning 16.7 million square km. The Agreement promises to do for the continent's economic freedom what the formation of the Organisation for African Unity (OAU) in May 1963 did for Africa's decolonization and political freedom. The agreement signalled the possibility of achieving wider continental integration. Negotiations for the creation of the Continental Free Trade Area (CFTA) were launched immediately following the signing of the TFTA. It will cover more than a billion people in 55 countries with a combined GDP of over US$3.5 trillion.

The power of Pan-Africanism as a guiding vision for the continent's development is widely studied, mostly as an aspirational phenomenon. At worst, Pan-Africanism has often been seen as a poor imitation of American federalism or European integration. Both of these perceptions do not reflect the profound nature of the role that the ideology of Pan-Africanism played in shaping the continent's economic transformation.

African leaders initially envisioned the creation of a unified continent. But this was not possible until all of Africa was free from colonial rule. Colonialism left behind a legacy of national economies that largely supplied the industrialized world with raw materials. Efforts to obtain better trading terms through international trade negotiations paid little dividends. The pressure to respond to the needs of a growing population created the need to look to regional markets.[3] But these same markets faced limitations such as poor infrastructure, trade barriers, and long-standing competition driven by uncertainties in the global trading systems. The route of political integration as a prerequisite for economic cooperation did not seem feasible despite a few isolated efforts.

This paper provides an alternative explanation of the emergence and evolution of regional economic integration by focusing on institutional innovation. The paper is divided into five sections. The first section provides background analysis of the forces that shaped Africa's early efforts to search for new approaches for economic transformation. This is followed

3 Bach, D. 2016. *Regionalism in Africa: Genealogies, Institutions and Transnational Networks*, Routledge, New York.

by an elaboration of the theoretical basis for understanding how Africa sought new models of economic order from the post-World War II chaos. The section builds on the theoretical foundations outlined to explain the behavior of systems that operate far from equilibrium and under conditions of uncertainty. Section 3 explores how the far-from-equilibrium dynamics led to the emergence of a variety of novel institutional arrangements aimed at governing regional integration. Section 4 explains how Africa has charted its own novel approach that combines the strengthening of state capacity with the expansion of complex economic networks to foster economic integration. Here we outline how Africa's emerging regional integration approaches radically differ from those adopted in other regions. The last section examines Africa's long-run economic outlook, with emphasis on a 50-year vision that is guided by the need for inclusive growth and sustainable development transitions.

A ship, left, loaded with shipping containers filled with goods bound for markets across the world await departure at a port in Cape Town, South Africa, Thursday, March 28, 2013. (AP Photo/Schalk van Zuydam)

1. Emergent Africa

The 20th century ushered the continent of Africa into the uncharted territory of colonization. The so-called scramble for Africa as delineated by the 1884-85 Berlin Conference set in motion a series of events that have irreversibly shaped the evolution of Africa. The scramble for colonial dominance among European countries defined the trajectory for the economic and political evolution of Africa.[4] This was followed by tumultuous events of the First World War and the Second World War.[5] The inherent chaos of war influenced the political direction of international politics in unpredictable ways.[6] It also provided a graphic backdrop against which new worldviews emerged that sought to provide a unified view between physical and social systems.

The dominant economic theories used to explain the international order and Africa's place in it were based on equilibrium notions. In other words, as long as Africa continued to export raw materials and import finished goods, its economies would be close to equilibrium.[7] Any shifts from that state could be remedied with minor policy nudging. Evidence from Latin America, however, was showing a different world in which the terms of trade for countries on the periphery continued to worsen. The idea that the world economy operated near equilibrium was being challenged, and so most interpretations of the future of Africa in the global economy could hardly predict the institutional innovations that have since arisen from the continent's efforts to pursue regional integration.

In fact, the very idea of Africa being able to integrate its diverse national economies was seen either as wishful thinking or dismissed as hollow political rhetoric. This chapter draws from Ilya Prigogine's ideas to explain how postcolonial economic and political uncertainty left Africa with few options but to set out a grand vision, which it pursued through

4 Pakenham, T. 1992. *The Scramble for Africa: While Man's Conquest of the Dark Continent from 1876 to 1912*, Avon Books, New York.

5 Mazower, M. 1998. *Dark Continent: Europe's Twentieth Century*, Bantam Books, New York.

6 Brunk, G.G. 2002. "Why Are so Many Important Events Unpredictable? Self-organized Criticality as the 'Engine of History'," *Japanese Journal of Political Science*, Vol. 3, No. 1, pp. 25-44.

7 Dornbusch, R. 1977. "Comparative Advantage, Trade, and Payments in a Ricardian Model with a Continuum of Goods," *American Economic Review*, Vol. 67, No. 5, pp. 823-839.

experimental learning. The original grand vision for Pan-Africanism was shaped by political ideology. But the pragmatic approaches to experimentation among groups of countries are what shaped today's economic integration efforts and outlook.[8]

Prigogine's pioneering work demonstrated that nature and its human constituents seek to generate order and complexity out of chaos. The first part of Prigogine's work focused on how irreversibility led to the emergence of structure or "self-organization" in complex systems.[9] He showed that "non-equilibrium may become a source of order and that irreversibility may lead to a new type of dynamic states of matter called "dissipative structures."[10] This is achieved not only following predetermined laws, but through creative choices that emerge randomly. These creative choices are sources of endless novelty. The idea of irreversibility was not just a direct challenge to established worldviews, but it pitted Prigogine against Einstein who stated: "There is no irreversibility in the basic laws of physics. You have to accept the idea that subjective time with its emphasis on the now has not objective meaning."[11] Understanding how irreversibility leads to the creation of structures has been Prigogine's lifelong preoccupation: "The dream of my youth was to contribute to the unification of science and philosophy by resolving the enigma of time."[12] There is a certain appeal to a reversible world in which it is possible to restore order. But such a world would also be devoid of creativity. As Coveney and Highfield say in their book *The Arrow of Time*, "We inhabit a world in which the future promises endless possibilities and the past lies irreversibly behind us. The arrow of time…is the medium of creativity in terms of which life can be understood."[13]

---

8 Robson, P. 1968. *Economic Integration in Africa*, George Allen & Unwin, London.

9 Prigogine, I. 1980. *From Being to Becoming: Time and Complexity in the Physical Sciences*, W.H. Freeman, New York; Jantsch, E. 1980. *The Self-Organizing Universe: Scientific and Human Implications of the Emerging Paradigm of Evolution*, Pergamon Press, Oxford, UK.

10 Prigogine, I. 1978. "Time, Structure, and Fluctuations," *Science*, Vol. 201, No. 4358, p. 777.

11 Prigogine, I. 1980. *From Being to Becoming: Time and Complexity in the Physical Sciences*, W.H. Freeman, New York, p. 203.

12 Prigogine, I. 1997. *The End of Certainty: Time, Chaos and the New Laws of Nature*, The Free Press, New York, p. 72.

13 Coveney, P. and Highfield, R. 1991. *The Arrow of Time: The Quest to Solve Science's Greatest Mystery*, Flamingo, London, p. 297. See also Laszlo, E. 1987. "Toward a Nonequilibrium Systems Theory of History," In Prigogine, I. and Sanglier, M.. eds. *Laws of Nature and Human Conduct: Specificities and Unifying Themes*, Task Force on Research Information and Study on Science, Brussels, Belgium, pp. 297-304.

Prigogine's view of irreversible time provided the conceptual foundation for the concept of "dissipative structures" in open systems that exchange energy and matter with their external environments when driven far from equilibrium. Imposing external constraints on systems moves them farther away from equilibrium, making the emergence of self-organizing behavior possible. It is for his elucidation of the idea of dissipative structures that Prigogine was awarded the Nobel Prize for Chemistry in 1977.

These ideas spread, amid controversies, to other natural sciences and eventually to some branches of the social sciences that sought to understand society as complex and non-deterministic systems. [14] Some of the earliest applications of these ideas in the social sciences were in economics, building on strands of thinking that defined economic change in evolutionary terms.[15] The theoretical extensions also built on parallels between biological and economic systems, especially those involving the emergence of urban structures.[16] The application of the thinking was initially cautious and relied on Prigogine as a source of metaphors though a few early studies sought to identify areas where the physical and economic worlds share common features or could benefit from homologous thinking.[17] Other studies extended the thinking into the field of political analysis.[18]

In Prigogine's view, the emergence of novelty does not constitute a linear path defining a trajectory of progress. When systems are pushed far from equilibrium they reach bifurcation or branching points at which new choices and solutions emerge. It is not possible to determine in advance the state at which such bifurcations are likely to occur: "only chance will decide, through the dynamics of fluctuation."[19] Nicolis and Prigogine

14 Arthur, W.B. 2014. Complexity and the Economy, Oxford University Press, New York.

15 Clark, N. and Juma, C. 1987. *Long-Run Economics: An Evolutionary Theory of Economic Change*, Frances Pinter, London, pp. 69-75.

16 Allen, P. 1988. "Evolution, Innovation and Economics," In Dosi, G. eds., *Technical Change and Economic Theory*, Frances Pinter, London, pp. 95-119.

17 Foster, J. 1994. "The Self-organization Approach in Economics," in Burley, P., Foster, J., eds., *Economics and Thermodynamics—New Perspectives on Economic Analysis*, Kluwer, Boston, USA, pp. 183-201; Foster, J. 1997. "The Analytical Foundations of Evolutionary Economics: From biological Analogy to Economic Self-organization," *Structural Change and Economic Dynamics*, Vol. 8, No. 4, pp. 427-451.

18 Byeon, J.H. 2005. "A Systems Approach to Entropy Change in Political Systems," *Behavioral Science*, Vol. 22, No. 3, pp. 223-231.

19 Nicolis, G. and Prigogine, I. 1989. *Explaining Complexity: An Introduction*, W.H. Freeman, New York, p. 72.

concluded that they had "succeeded in formulating…the remarkable interplay between chance and constraint, between fluctuations and irreversibility."[20] These choices or new pathways were devoid of value judgment or destiny. In fact, the idea of destiny did not exist in Prigogine's world view, only new pathways with unpredictable outcomes.

The absence of destiny leaves a world of uncertainty, which may be unsettling to those who believe in an orderly world or rely on mystical guidance that seeks to suspend reality. By taking destiny out of the equation, the uncertainty provides myriad opportunities for the purposive generation of alternative pathways from any given bifurcation point. In the economic and political arena, this is driven by institutional experiments. But the open outlook allows for the creation of imagined futures. As Prigogine put it: "I believe that what we do today depends on our image of the future, rather than the future depending on what we do today."[21] He acknowledges that "we have some conditions that determine limits of the future but within these limits are many, many possibilities."[22] Within the various limits and constraints that post-colonial Africa faced, the continent was able to pursue many possibilities for exploring new pathways into its imagined future.

In a view that is consistent with that of the founders of Africa's integration vision, Prigogine says, "Therefore, since no deterministic prediction is likely to be valid, visions of the future—utopian visions—play a very important role in present conduct. I am more afraid of the lack of utopias."[23] In Africa's case it took the form of regional integration efforts that resulted in a complex array of regional bodies with overlapping mandates and national members. But many of them shared common features, given that they were creative responses to homologous challenges. Novel institutional entities, some of which had roots in the colonial era, became the foundations for the construction of emerging Africa.

20 Nicolis, G. and Prigogine, I. 1989. *Explaining Complexity: An Introduction*, W.H. Freeman, New York, p. 73.

21 Prigogine, I. 2004. "Beyond Being and Becoming," *New Perspectives Quarterly*, Vol. 21, No. 4, p. 11.

22 Ibid.

23 Ibid.

2. Chaos and uncertainty: Africa far from equilibrium

The Second World War disrupted the global colonial order and opened up avenues for independence. India led this movement and served as a role model for other countries, especially in Africa. India did not just demand political freedom, but it challenged the very idea of economic equilibrium that justified the theory of comparative advantage. It was India's struggle for independence that inspired economists to start questioning whether colonies could survive economically without continuing to rely on the same colonial ties they were seeking to break. Concerns over the future of India inspired a number of studies that revisited the sources of economic growth. MIT economist Robert Solow pioneered a model that explained the sources of economic growth through changes in capital, labor, and technical change.[24] Solow received the Prize in Economic Sciences in Memory of Alfred Nobel in 1987.

Studies conducted in Latin American countries provided quantitative evidence against claims that nations that traded with each other operated at near equilibrium. Argentinian structural economist Raúl Prebisch provided the intellectual leadership for this theory.[25] The work showed a world marked by a center, a periphery, and the unequal exchange between them, where the center produced manufactured goods and the periphery depended on the export of raw materials.[26] To correct this imbalance, Prebisch advocated for improving trade terms for the countries on the periphery.[27] His work led to the creation of the United Nations Conference on Trade and Development (UNCTAD) in Geneva in 1964. UNCTAD focused on diplomatic advocacy for developing countries on trade-related issues such as preferential access to markets. It also championed trade among countries on the periphery and encouraged regional integration

24 Solow, R.M. 1957. "Technical Change and the Aggregate Production Function," *Review of Economics and Statistics*, Vol. 39, No. 3, pp. 312–20.

25 Adebajo, A. 2016. "A Tale of Three Cassandras: Jean Monnet, Raúl Prebisch and Adebayo Adedeji," in Levine, D. and Nagar, D. eds. *Region-Building in Africa: Political and Economic Challenges*, Palgrave Macmillan, New York, 53-67.

26 Prebisch, R. 1950. *The Economic Development of Latin America and Its Principal Problems*, United Nations, New York.

27 Love, J.L. 1980. "Raúl Prebisch and the Origins of the Doctrine of Unequal Exchange," *Latin American Research Review*, Vol. 15, pp. 45–72.

as a way to fix global trade imbalances. He became the first UNCTAD Secretary-General.

In his earlier years Prebisch believed in free markets and the doctrine of "international comparative advantage" that rested on Newtonian equilibrium notions.[28] The impact of the Great Depression on Argentina, however, forced him to reexamine his position. The country had been a major exporter of beef and wheat to the United States, but the tables gradually turned, worsening Argentina's terms of trade. His thinking shifted from support for free trade to advocating protectionism of developing country industries. The intellectual debates generated in UNCTAD based on evidence from Latin America resonated with African countries, which depended on export of raw materials. Many were granted independence on the understanding that they would maintain continuity in international trade relations. Their recourse was therefore to seek diplomatic channels, especially through negotiations under the auspices of UNCTAD, for the same trade relief that Latin American countries were seeking.

The continued struggle for independence put in doubt the future of African colonial economic relations. The founders of the liberation movements had no clear vision of how their struggles would unfold. Many of them lacked a coherent outlook and operated along narrow partisan or ethnic interests, a problem that transcended the colonial era and persists in places such as Sudan.[29] They included a wide array of interests and splinter groups.[30] But at a grander scale they shared a common view that economic freedom and prosperity would hardly be achieved without first securing political freedom as advocated by Ghana's Kwame Nkrumah. As the first African country to gain independence in 1957, Ghana was forced to focus on the liberation of other African countries to achieve the political utopia. Nkrumah envisaged that the next country to be free, Congo Kinshasa, could join Ghana to form the crucible for the United States of Africa.

28 Maneschi, A.1998. *Comparative Advantage in International Trade: A Historical Perspective*, Elgar Publishing, Cheltenham, UK.

29 Roessler, P. 2016. *Ethnic Politics and State Power in Africa: The Logic of Coup-Civil War Trap*, Cambridge University Press, Cambridge, UK.

30 Gibson, R. 1972. *African Liberation Movements: Contemporary Struggles Against White Minority Rule*, Oxford University Press, Oxford, UK.

The chaos in Congo itself and the threat of secessionist movements fuelled by foreign mining interests made it difficult to realize this vision. The gruesome assassination of Patrice Lumumba, Congo's first Prime Minister, threw the country into a spiral of violence that made the country largely ungovernable. The cycles of violence were rooted in the brutal rule of the region by Belgium under King Leopold II. Unlike other parts of Africa that were colonized, King Leopold II treated the cynically named Congo Free State as his personal property. He ran the colony using mercenaries who killed millions of Congolese people, setting in motion the cycles of violence that continue to play out today.[31] Instability in the Congo, a region the size of Western Europe in the middle of Africa, became a major challenge for those seeking a peaceful transition to independence. But it also provided additional support to those arguing that Africa would be better off united in some form.

The idea of a united continent first appeared in a poem by Marcus Garvey in 1924 entitled, 'Hail, United States of Africa'. The poem would become a rallying cry for Africans and inspire variants of the Pan-Africanist movement. The ultimate expression of the idea was the formation of the Organisation of African Unity (OAU) in 1963, which Nkrumah championed. This was a watered-down version of the union he wanted that sought simply to accommodate divergent views on the primacy of the newly independent states as units of political expression.[32] Prior to the formation of the AU, two main positions divided the countries. The Casablanca Group, including Algeria, Egypt, Ghana, Guinea, Libya, Mali, and Morocco, wanted to see the creation of a federation. The Monrovia Group, led by Senegal and including Ethiopia, Liberia, Nigeria, and most of the former French colonies, favored a more incremental approach that would build upon economic integration as a starting point. Those early differences marked a bifurcation that largely defined the evolution of African regional integration since then.

The creation of the OAU institutionalized the liberation agenda. But it also helped to define colonial boundaries as the basis for new political units of analysis. These early decisions and events set the political path that later

31 Hochschild, A. 1999. *King Leopold's Ghost: A Story of Greed, Terror, and Heroism in Colonial Africa*, Houghton Mifflin Harcourt, Boston, USA.

32 Wolfers, M. 1979. *Politics in the Organization of African Unity*, Methuen Young Books, London.

shaped the way Africa visualized and pursued regional integration. The boundaries themselves were arbitrary, having been drawn at the Berlin Conference convened to partition Africa with colonial interests in mind. They split families, clans, and ethnic groups. The unification of ethnic groups under their own independent nations became threats to the new sovereign states. The war in Biafra is one of the most catastrophic examples of the struggle arising from this threat, which remains a challenge in many African countries.[33]

The internal agitation for autonomy had other historical roots. Many colonial nations were formed by cobbling together ethnic groups that were already autonomous entities or kingdoms. Colonization punctuated their self-rule or the drive toward it. In other cases, colonial rulers such as Great Britain helped larger ethnic groups assimilate smaller ones. This approach was in some cases associated with a system of indirect rule when local rulers acted on behalf of the colonizers to administer large populations spread over expansive territory, especially in Nigeria and Kenya. The British in turn offered protection to local rulers.[34]

According to Mamdani, the system of indirect rule resulted in states with "two distinct systems of power—one civic but racialized, the other customary but ethnicized—under a single authority. The structural effects of this form of power reproduced a double division, that between the urban and rural, and that between different ethnically-organized Native Authorities in the rural."[35]

As a result of colonial rule, political parties sometimes formed along ethnic lines during the struggles for independence; some countries divided into radical and conservative groupings. Most of the emerging sovereign states responded to the divergent political expressions by imposing autocratic rule and suppressing democratic agitation, part of which was to advance

33 Forsyth, F. 1999. *The Biafra Story: The Making of an African Legend*, Pen & Sword Books, Barnsley, South Yorkshire, UK.

34 Crowder, M. 1964. "Indirect Rule: French and British Style," *Africa: Journal of the International African Institute*, Vol. 34, No. 3, pp. 197–205.

35 Mamdani, M. 1999. "Historicizing Power and Responses to Power: Indirect Rule and its Reform," *Social Research*, Vol. 66, No. 3, p. 883.

ethnic interests under the cover of multi-party politics.[36] In some countries leadership ended up being controlled by a handful of ethnic groups, a factor that explains much of the internal unrest in many African countries today.

Over the same period, Africa saw an increase in military coups and an increase in despotic rulers, many of whom presided over the plundering of their countries.[37] Popular movements and the demand for democratic change have over time led to the replacement of military leaders with democratically elected ones. Some of these changes were accompanied by reforms in national constitutions that expanded human liberties and curtailed the abuse of executive powers. Implementation of many of these provisions has been slow, but most African countries have introduced political innovations that reflect their political cultures. Debates still continue on issues such as presidential term limits, where enabling amendments have been introduced in national constitutions. It remains unclear whether uniform requirements for term limits are necessary for democracy or development. What is evident, however, is that Africa has been experimenting with new forms of governance and only time will tell what their long-term impacts are likely to be.

Two important economic factors shaped post-colonial Africa. The first was an economic continuity in which Africa largely remained a supplier of raw materials for the industrialized countries under worsening terms of trade. Countries that depended heavily on export of raw material endured extensive economic instability. Heavy international borrowing exposed those economies to harsh credit conditions and subsequent debilitation by the imposition of structural adjustment programs. The programs led to the liquidation of a wide range of public enterprises as part of the bid to remove protections for infant industries. But even more destructive was the impact of the programs on Africa's nascent science and technology infrastructure.[38]

36 Riedl, M. R.B. 2014. *Authoritarian Origins of Democratic Party Systems in Africa*, Cambridge University Press, Cambridge, UK.

37 Decalo, S. 1990. *Coups and Military Rule in Africa: Motivations and Constraints*, Second Edition, Yale University Press, New Haven, USA.

38 Enos, J.L. ed. 1995. *In Pursuit of Science and Technology in Sub-Saharan Africa: The Impact of Structural Adjustment Programs*, Routledge, New York.

The second but even more serious factor was that most African economies were largely mining or plantation enclaves with few economic links to their neighbors. The countries started to experience economic decay not because they had small markets but because of the closed nature of their economic systems. Colonial African infrastructure was designed to connect the continent to their colonizers and not to foster endogenous development. Their populations grew, but their exchange of energy, materials, products, and ideas remained stagnant. Many of these economies also experienced extensive corruption, which is in itself an expression of the nature of extractive industries.[39]

These countries did not have the infrastructure connectivity to expand the necessary exchanges.[40] Their economic decay deepened as their terms of trade with their former colonial occupiers worsened. Many others did not revise their thinking about sources of industrial development and continued to believe in the elusive idea of commodity-led industrialization. They only seemed to visualize their place in international trade in terms of limited positions in the global value chains, and they undervalued the importance of stronger economic linkages with neighboring countries.

This precarious situation was flung into deeper chaos and uncertainty when the Cold War ended.[41] The West, which had continued to support Africa through foreign aid, turned inward to focus on trade within the European Union and the former Eastern Europan Bloc. The creation of the World Trade Organization (WTO) also changed relations between Europe and Africa by phasing out preferential trading arrangements. Although treaties such as the Lomé Convention sought to preserve some of those arrangements, the impacts of globalization on Africa could not be ameliorated by these post-colonial arrangements.

Over this period Africa also experienced other major shocks and challenges that would force it to look internally for solutions that involved greater interactions among neighboring countries. The drought of the

39 Burgis, T. 2015. *The Looting Machine: Warlords, Oligarchs, Corporations, Smugglers, and the Theft of Africa's Wealth*, Public Affairs, New York.

40 Ndulu, B.J. 2006. "Infrastructure, Regional Integration and Growth in Sub-Saharan Africa: Dealing with the Disadvantages of Geography and Sovereign Fragmentation," *Journal of African Economies*, Vol. 15, Suppl. 2, pp. 212-244.

41 Adebajo, A. 201. *The Curse of Berlin: Africa and the Cold War*, Columbia University Press, New York.

1970s and the associated famines led to increased collaboration among affected countries.[42] The liberation of South Africa involved thinking of alternative infrastructure networks to isolate the regime, enforce sanctions, and build alternative export routes for southern African countries. The same focus on infrastructure would later become a focus for economic integration in the region under the Southern African Development Community (SADC).

These developments were part of a larger effort across Africa to experiment with regional integration on a wide range of issues involving diverse countries.[43] Many of these experiments involved overlapping membership and created a complex array of creative interactions across Africa. The blossoming of these experiments offered Africa a rich reservoir of lessons upon which to shape a new continental order and complexity. The experiments also strengthened the nation states as units of political engagement.

Some of the regional collaboration or integration efforts had predetermined origins in colonial federations.[44] But the new efforts sought to achieve different objectives, especially to expand local interactions and collaboration rather than continue to support a postcolonial agenda. Tensions emerged, especially with the EU, between the new objectives and the desire to maintain postcolonial economic continuity. Despite these tensions, Africa continues to strengthen its regional integration institutions as foundations for its new economic and political identity. The initial state of chaos in the far-from-equilibrium context opened up a wide range of possibilities for Africa's evolution. A pragmatic approach to regional integration, guided by lessons derived from experimentation, is replacing the early utopia of political integration.

42 Franke, R.W. and Chasin, B.H. 1980. *Seeds of Famine: Ecological Destruction and the Development Dilemma in the West African Sahel,* Allanheld Osmun, Montclair, NJ, USA.

43 Levine, D. and Nagar, D. eds. 2016. *Region-Building in Africa: Political and Economic Challenges*, Palgrave Macmillan, New York.

44 Bach, D. 2016. *Regionalism in Africa: Genealogies, Institutions and Transnational Networks*, Routledge, New York, pp. 10-31.

3. Creativity, complexity, and irreversibility

Prigogine stated that the real gap in our worldviews is not between the physical and social sciences, but in macrosystems and elementary processes. The imperfect equilibrium conditions that characterized postcolonial Africa also provided new opportunities for technological innovation and entrepreneurship, though within the constraints of poor infrastructure, low levels of technical capacity, and underdeveloped markets. But the relative isolation of Africa from the global economy also afforded the continent new opportunities to innovate in response to local challenges. Some of the results of the innovation reflect interactions between elementary processes in science and technology and the wider societal macrosystems.[45]

The flowering of creativity is so pervasive that it is used as a basis for explaining why African communities and individuals thrive under conditions of extreme poverty. Part of the explanation is that individuals are able to deploy their entrepreneurial instincts by breaking existing rules or skirting obstacles, which is indeed part of the entrepreneurial process.[46] But a large part of the innovation comes from the creativity unleashed by being in a state of chaos where possibilities for finding solutions are exponentially expanded. Although it tends to occur within existing constraints such as poor infrastructure, the spread of innovation itself makes it possible for governments and the private sector to invest in improving the entrepreneurial environment.

One such example is the rise of the mobile money transfer industry, which started by harnessing basic engineering elements of cell phones and transforming them into radically new industries that have gone global. This innovation built on the rapid spread of the mobile revolution in Africa in general and in Kenya in particular.[47] The case of M-Pesa (which means

45 For an analysis of such interactions, see Mody, C. 2017. *The Long Arm of Moore's Law: Microelectronics and American Science*, MIT Press, Cambridge, USA.

46 Olopade, D. 2014. *The Bright Continent: Breaking Rules and Making Change in Modern Africa*, Houghton Mifflin Harcourt, Boston, USA.

47 Aker, J.C. and Mbiti, I.M. 2010. "Mobile Phones and Economic Development in Africa," *Journal of Economic Perspectives*, Vol. 24, No. 3, pp. 207-232.

"money" in Swahili), launched in 2007, is a classic example of technological leapfrog.[48] Mobile money transfer took off because it leapfrogged both inadequate telephone land lines and inefficient banking services. The innovation took off in Kenya where it was initially enabled by relaxing banking and telecoms regulations. Over time mobile firms became part of the banking sector and vice versa.

Vodafone's Safaricom launched the system in 2007 as a simple way of sending small amounts of money via text message between subscribers to the service. This function already existed in all mobile phones but it took ingenuity to transform what seemed like a trivial act into a global industry. In its first decade the system expanded to cover a range of services including international transfers, educational support, loans, and health provisions.

Creating such a system involved reforming national laws to expand the entrepreneurial space for the new infrastructure.[49] In M-Pesa's case in Kenya, regulations focused on allowing public and private entrepreneurs to introduce new business models that enabled the poor to become part of the mobile revolution. The business models included pre-payments and low-cost handsets.

In a number of African countries institutions were created to train new professionals to work in the mobile sector. Some of these efforts included the founding of new telecoms universities in countries such as Egypt, Kenya, and Ghana. Analogous institutions such as the Digital Bridge Institute in Nigeria perform similar functions. In these cases the impetus for innovation in higher education came from telecoms rather than education ministries.

The infrastructure revolution has also undergone dramatic changes. Early mobile phone systems were connected to the rest of the world through satellite links. Until 2009, only a small number of West African cities had access to undersea fiber optic cables. Today all of continental Africa and

48 Hughes, N. and Susie, L. 2007. "M-PESA: Mobile Money for the 'Unbanked' Turning Cellphones into 24-Hour Tellers in Kenya," *Innovations*, Vol. 2, No2. 1-2, pp. 63-59.

49 Ndemo, B. 2016. "Inside a Policymaker's Mind: An Entrepreneurial Approach to Policy Development and Implementation," In Ndemo, B. and Weiss, T. eds., *Digital Kenya: An Entrepreneurial Revolution in the Making*, Palgrave Macmillan, London, pp. 239-267.

Indian Ocean states have access to fiber optic cables with significantly higher bandwidth.

Many countries now face the challenge of leveraging the broadband infrastructure for economic transformation. In some countries telecoms operators have yet to migrate from relying on satellite links to using the fiber optics cables. As a result, the promise of low communication costs has yet to happen. Even where the migration has occurred, access charges still remain prohibitive. Thus the infrastructure is not being fully utilized to foster innovation and development.[50]

There is great optimism over the emergence of information and technology hubs in major urban areas across Africa.[51] These hubs have become a symbol of youth entrepreneurship in Africa. Indeed, many of them are producing new technologies designed to solve local problems.

The importance of this case lies in the extent to which nonequilibrium systems are able to rapidly embrace seemingly low-cost technologies and turn them into high-impact ventures. The mobile revolution has also been a force in regional integration, and countries continue to share common standards that allow users to roam across countries through common infrastructure and payments arrangements. Such regional arrangements have also helped to cut down on telecommunications costs for users. More importantly, the revolution represents an opening of African countries to their neighbors, which increases the interactions needed to counteract the forces of economic decay.

There are many other examples of such creativity that help explain the connections between elementary natural processes and wider societal evolution. These include efforts to leverage emerging technologies in fields such as additive manufacturing, unmanned aerial vehicles, and genomics to introduce new products and services aimed at transforming the economic landscape. Such creative solutions are generated and adopted at a fairly rapid rate. This rate of adoption can be explained in part by the

50 Juma, C. and Lee, Y.C. 2005. *Innovation: Applying Knowledge in Development*, Earthscan, London, pp. 78-87.

51 Adesina, O. et al., eds. 2016. *Innovation Africa: An Emerging Hubs of Excellence*, Emerald Group Publishing, Bingley, UK.

advantages of being in a far-from-equilibrium state that is unconstrained by incumbent forces.[52]

These technological adoptions, however, have had relatively limited impact because of the absence of the complementary institutional innovation that is necessary to expand their application and stimulate further creativity. In this respect, the new institutions play a catalytic role that in the end could lead to their own adjustment, if not demise. Catalysts in the social arena differ from those in chemical processes in that they are not affected by the changes that they induce. In fact, institutional innovation unfolds in a coevolutionary manner, simultaneously changing the underlying conditions and the institution itself. In many cases institutional rigidities become an integral part of path-dependency, and they push systems towards stability. But even under those circumstances, the systems reach bifurcation points at which their symmetry is broken and new pathways for creativity emerge.[53] The tensions between the need for systems stability and the pressure to innovate constitute some of the most unresolved sources of controversy over innovation in society. Every generation is locked into this endless drama of the mutual articulation between novelty and continuity.[54]

The novel regional and continental market institutions that are being created will provide direct opportunities for expansion of the economic space. They will also offer new signals that will lead to new ventures and further institutional adjustment. For example, the signal of larger regional markets is likely to contribute to the emergence of catalytic banks that will help to finance industries that can operate on the relevant economies of scale.[55] The increase in the number of industries will also expose people in the region to new technical knowledge, which can then serve as a basis for the creation of derivative enterprises. Regional institutional creativity is therefore at a critical moment in spurring new technological applications, which in turn will require additional adjustments in institutions to

52 Juma, C. 2016. *Innovation and Its Enemies: Why People Resist New Technologies*, Oxford University Press, New York.

53 Prigogine, I. and Stengers, I. 1984. *Order Out of Chaos: Man's New Dialogue with Nature*, The Penguin Press, London, pp. 160-167; Nicolis, G. and Prigogine, I. 1989. *Explaining Complexity: An Introduction*, W.H. Freeman, New York, p. 71-75.

54 Juma, C. 2016. *Innovation and Its Enemies: Why People Resist New Technologies*, Oxford University Press, New York.

55 Schumpeter, J. 1934. *The Theory of Economic Development*, Harvard University Press, Cambridge, MA, USA, pp. 65-74.

smooth the functions of new ventures. There will be moments when these coevolutionary states will appear to move in the direction of equilibrium in specific sectors or industries. But the overall pattern of behavior will be a series of dynamic events that lead to further bifurcations and expansion of economic complexity.

4. Africa's divergent globalization

Since the early 1990s there has been intense political opposition to globalization.[56] This was mostly because the liberal agenda underlying globalization at the time was largely an extension of the prevailing global economic model based on comparative advantage. It was the equilibrium model that assumed that no major disruptions would occur that could not be remedied with modest nudging or adjustments in the system. Opponents of the model, however, pointed to a number of irreversible processes that could be detrimental to a wide range of human and environmental fields such as labor and health and even international trade itself.

Even more pronounced were concerns over the potential ecological consequences of the new trade regime. Efforts to find comfort through international negotiations were inadequate partly because environmentalism "is driven by a sense of urgency that is not quenched by calls for time and adjustment, while international trade is driven by age-old dynamics and patterns that do not change overnight. Between these two contrasting approaches lie some fundamental rigidities about industrial structures and attitudes."[57]

The structure of the global economy and distribution of industries have followed the same path of the comparative advantage model.[58] The existence of path-dependency in structural patterns is notable. But even more striking are clear signs of unequal clustering of industrial activity without necessarily reducing global industrialization rates.[59] However, premature deindustrialization has occurred in other regions.[60] There have also been areas where industrial capabilities have diffused to emerging markets,

56 Gills, B.K., ed., 2000. *Globalization and the Politics of Resistance*, Palgrave Macmillan, Houndsmills, Basingstoke, Hampshire, UK.

57 Juma, C. 2003. "International Trade and Environment: Towards Integrative Responsibility," In Vertovec, S. and Posey, D., eds., *Globalization, Globalism, Environments, and Environmentalism: Consciousness and Connections*, Oxford University Press, Oxford, UK, p. 35.

58 Wood, A. 2017. *Variation in Structural Change Around the World, 1985-2015: Patterns, Causes, and Implications*, United Nations University World Institute for Development Economics Research, Helsinki, Finland.

59 Felipe, J. and Mehta, A. 2016. "Deindustrialisation? A Global Perspective," *Economics Letters*, Vol. 149, pp. 148-51.

60 Rodrik, D. 2016. "Premature Deindustrialisation," *Journal of Economic Growth*, Vol. 21, No. 1, pp. 1-33.

indicating that globalization need not be a zero-sum game.[61] But on the whole, the model resulted in many of the predicted dislocations, including in countries that championed it. The outcome has been growing opposition framed as economic populism and driven by zero-sum worldviews.

To understand the dynamics of Africa's regional integration as a divergent form of globalization requires a different conceptual vantage point. In his book, *The Consequences of Modernity*, Giddens defines globalization as the "intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa."[62] This definition implies a systems approach in which the various parts interact without the necessity of a predetermined outcome. As social relations intensify, potentially contradictory features emerge. Networks create opportunities for countries, communities, and firms to operate in nested hierarchies whose impact is larger than the sum of the actors. This intensification is not done at the expense of the constituent parts. This open process also provides opportunities for the individual actors or parts to strengthen their local identities.

This logic explains why African countries pursue regional integration while also seeking to strengthen their sovereign identities.[63] The positive-sum approach differs significantly from the conventional view that strengthening international organizations entails ceding part of national sovereignty.[64] To the contrary, articulating national interests through international organizations amplifies the impact of states on the global stage. The network effects of complex diplomatic relationships are usually undermined by the imposition of command and control governance structures.[65] This may be in the form of directives issued from a centralized authority to nation-states, an approach that the African Union has avoided. It can be argued further that their willingness to experiment with regional

61 Haar, J. and Ricardo, E., eds., 2016. *Innovation in Emerging Markets,* Palgrave Macmillan, Houndmills, Basingstoke, Hampshire, UK.

62 Giddens, A. 1990. *The Consequences of Modernity*. Stanford University Press, Stanford, California, USA, p.

63 Welz, M. 2013. *Integrating Africa: Decolonization's Legacies, Sovereignty and the African Union*. Routledge, New York.

64 Sending, O. et al. 2011. "The Future of Diplomacy: Changing Practices, Evolving Relationships," *International Journal*, Vol. 66, Vol. 3, pp. 527-542.

65 Wilkinson, D. 2002. "Civilizations as Networks: Trade, War, Diplomacy, and Command-Control," *Complexity*, Vol. 8, No. 1, pp. 82-86.

integration is an expression of both the growing strength of their sovereign capacities and of their associated identities. This view also illustrates how the notion of sovereignty is shifting from the Westphalian model that stresses the discrete powers of individual states to greater inter-state interactions.[66]

This systems approach entails the strengthening of nations as nodes - with physical infrastructure as one of the key connecting points and trade as the other. These features of the integrated system are purposively structured through regional negotiations so that they can provide the necessary room for the evolution of the system as a whole.

One of the main benefits of expanding opportunities for regional integration is not just increased trade, but reduced resistance to products coming from neighboring countries. One of the features of African countries is that they tend to produce goods in the same product categories, making it difficult to promote trade. This causes neighboring countries to use a wide range of tariff and nontariff instruments to protect local industries. The limited rate of innovation expands the range of product categories and compounds the situation. Signals from expanded market opportunities for product diversification (arising from regional market integration) shift the discussion from classical market protection to the search for slow increments in trade, reduction of unfair trading practices, and the use of trade remedies for some of the affected industries.

The process of expanding domestic industrial development itself involves overcoming resistance to technology.[67] Increased international commerce reinforces these trends by reducing resistance to technology from trading countries.[68] Regional integration therefore amplifies the adoption of new technologies both domestically and internationally through cross-border trade. Those seemingly modest moments of local bifurcation can trigger large-scale creative forces that transform underdeveloped regions into important economic players over a short period.

---

66 Ip, E.C. 2010. "Globalization and the Future of the Law of the Sovereign State," *International Journal of Constitutional Law*, 2010, Vol. 8, No. 3, pp. 636-655.

67 Parente, S.L. and Edward C. Prescott, E.C. 1994. "Barriers to Technology Adoption and Development," *Journal of Political Economy*, Vol. 102, No. 2, pp. 298-321.

68 Holmes, T. and Schmitz, Jr., J.A. 1995. "Resistance to New Technologies and Trade between Areas," *Federal Reserve Bank of Minneapolis Quarterly Review*, Vol. 19, No. 1, pp. 2-18.

Fields such as environmental management that are in decline could also benefit from new creative forces arising from interactions across national boundaries. More specifically, much of the pressure on Africa's wildlife is a result of the decline in the range of a number of species such as giraffe, cheetah, and lion. Creative conservation measures could include migration corridors that expand the range of endangered species to increase their survival chances.[69] Satellite-enabled technologies will help not only in determining where to establish such corridors, but they will become essential for wildlife monitoring and protection.

These patterns of incessant renewal have also been observed in post-conflict countries. Rwanda, for example, suffered tragically from the 1994 genocide but transformed itself within a generation to become an important economic actor in the region. Deliberate efforts to build human competence among the youth helped harness the development potentialities unleashed by the chaotic circumstances. At the same time, new governance approaches helped to generate order and complexity out of the chaos.[70] The case of Rwanda is interesting in its own right. But it offers larger lessons for other African countries and the continent as a whole on how to manage the transition from chaos to order and complexity.[71] It carries important lessons on how to address the risks of path-dependency that often make it difficult for economies to transition when new creative opportunities emerge from random bifurcations.

One of the critical roles that regional and continental bodies play is providing opportunities for collective learning. The AU and the Regional Economic Communities (RECs) provide continuing opportunities for heads of state, ministers, and other participants to learn from the experiences of their peers. This learning opportunity often gets ignored by those seeking to assess the effectiveness of regional bodies. Their catalytic role therefore extends to sharing national and regional experiences. It is through these bodies that various nations serve as role models for others seeking to implement similar programs. In this respect, regional bodies

69 Jachowski, D. et al. 2013. "Corridor Use and Streaking Behavior by African Elephants in Relation to Physiological State," *Biological Conservation*, Vol. 167, pp. 276-282.

70 Honeyman, C. 2016. *The Orderly Entrepreneur: Youth, Education, and Governance in Rwanda*, Stanford University Press, Stanford, California, USA.

71 Geyer, R. and Rihani, S. 2010. *Complexity and Public Policy: A New Approach to 21st Politics, Policy and Society*, Routledge, New York.

provide opportunities for member states to exercise their influence through knowledge-sharing rather than political power or legal enforcement. By serving as learning platforms, regional bodies also offer a basis for vital feedback on the implementation of regional integration measures. Over time, regional bodies will strengthen their internal research capabilities to be able to support more effectively this learning function. This can be complemented by other organs of the AU such as the Pan-African University.

Drawing from the inspirational work pioneered by Nobel laureate Ilya Prigogine, this chapter has laid out a framework for explaining an African continent in far-from-equilibrium conditions. The tumultuous events of the 20th century marked by two world wars left Africa and much of the world in a state of chaos. Ironically, this period coincided with an increased application of equilibrium models in economic analysis. Africa's regional integration efforts represent a creative response to the chaos. There were no predetermined paths to pursue and no prior role models to emulate. Experimental searches for relevant solutions, identification of the key lessons from those experiments, and the ensuing expansion of space for economic development and prosperity led to regional integration.

The process itself was initially guided by political utopias about continental unification, but the pursuit of that objective took on a pragmatic approach with a focus on economic integration. The ultimate goal of unification still guides the integration process, but it relies on a systems view that involves greater continental and global interactions while strengthening national identities. Africa is at a critical juncture where it is now starting to incrementally use the lessons learned from the RECs to move toward a more integrated continent. This process itself is unpredictable, but past experience shows that it will likely be experimental and incremental in nature.

On a geographical scale, it is the most ambitious effort at regional economic integration ever attempted in history. It is not just a mark of political courage but represents a remarkable effort to mobilize an area three times the size of the United States toward a new order in a peaceful and diplomatic way. In many respects it is a grand effort of the kind Prigogine would have liked to see as vindication of his vision that the systems dynamics he demonstrated in the elementary physical world appear to express

themselves with the same patterns in the macroscopic arena of political innovation. The approach that Prigogine advanced changes how we view the evolution of Africa. More importantly, making the explicit, transparent shift from a mechanistic worldview to a systems approach could change the way we understand Africa and think about political processes. [72]

72 Ma, S.-Y. 2007. "Political Science at the Edge of Chaos? The Paradigmatic Implications of Historical Institutionalism," *International Political Science Review*, Vol. 28, No. 1, pp. 57-78.

5. In the long run

Over the last 50 years Africa has laid a foundation for its transformation through the creation of catalytic institutions at the continental and regional level. These institutions provide the basis through which a new vision of inclusive growth and sustainable development will be implemented.[73] The creation of the institutions has expanded opportunities for creativity and innovation. The way forward will be equally experimental, except that it will build a richer tapestry of institutional arrangements and lessons learned from past integration efforts.

This process was guided by the view that Africa could not define its future by accepting the position of sitting on the margins of the prevailing economic system. For Africa, a return to some form of global equilibrium after the two world wars was not a viable option. For the pioneers the future lay in defining a new vision given the far-from-equilibrium conditions in which Africa found itself. The conditions were marked by uncertainty but they also offered new opportunities for the creative transition from chaos to order and complexity.

The starting point was to craft a new vision that captured the geographical breadth of the continent, the spread of its cultural connections, the depth of its historical roots, and the loftiness of its aspirations. For the pioneers, this vision was Pan-Africanism, and the starting point was a combination of decolonization and political integration. At the time of independence the only way forward was to provide a vivid and inspirational reference point for unification. The political ideology of Pan-Africanism suited the purpose. Then it appeared that politics trumped economics and all else.

There were differences on the timing of political integration between those who wanted the creation of the United States of Africa and those who preferred an incremental approach. The latter group won the day, partly because of the desire to protect nationalist interests. This turned out to be an important starting point for a regional integration approach that built

73 Valensisi, G. and Karingi, S. 2016. "From Global Goals to Regional Strategies: Towards an African Approach to SDGs," *African Geographical Review*, Vol. 36, No. 1, pp.1-16.

on the strength of sovereign actors while seeking to foster a greater, nested hierarchy of integration across the continent.

Nothing could be achieved without the creation of institutions and sets of rules for governing political interactions and organizations that provided structures for implementing regional integration objectives. The creation of such catalytic institutions involves extensive diplomatic efforts at the continental and regional levels. African leaders envisaged the creation of a continental economic area. But they also understood the limitations of pursuing this objective on a continental level. The solution lay in creating and designating regional economic communities as the building blocs for continental economic integration.

The treaties and constitutive instruments of the regional bodies shared the common purpose of fostering economic development. But how they implemented their mandates was left to regional priorities, often driven by opportunities or crises. What followed was a period of regional experimentation that included supranational politics, trade, security, environment, and infrastructure as key local priorities. Through years of experimentation, trade became the platform for the broadest base upon which to foster economic integration. For Africa, deepening regional trade was about more than just liberalizing markets. It was viewed as a starting point for economic development.

Armed with the lessons from the various regional experiments, African countries embarked on a process to consolidate the gains so far made, promote convergence, and thicken practical interactions. This process involved new negotiations to integrate regional bodies on trade and development issues. The negotiations highlighted the importance of foundational investments in areas such as infrastructure and the importance of industrialization in structural transformation. Although the consolidation started with trade and development, it also provided a framework of expanding integration in other areas such as peace and security, human health, infrastructure development, and environmental management. The regional catalytic institutions also provide a framework for regional integration among nonstate actors such as the private sector.

Africa has moved on from the age of decolonization. It has drawn from its regional integration lessons to project a new outlook for the future under the umbrella of Agenda 2063. No other continent has set out a 50-year vision. Its overall goal is to become a prosperous continent built on the principles of inclusive growth and sustainable development. It aspires to be more integrated using the ideals of Pan-Africanism and continuous renewal.

One of the most pressing challenges of the coming decades will be seeking to meet human needs while protecting the environment. This will require a new view of the relationship between humans and the environment. More specifically, it will require a recognition of the importance of ensuring that Africa's ecological infrastructure is managed in such a way that it can sustain the needs of its growing population. The future is open and provides a wide range of possibilities for creativity, especially when supported by abundant access to energy services.[74] These opportunities, however, must be pursued within the context of inner human limits as well as outer ecological limits.[75]

A number of regional integration bodies have grappled with how to address ecological degradation and drought. The lessons they have learned in the process are similar to the measures that are needed to address the long-term impacts of climate change. The unfolding trade regime may also offer lessons on how to address some of the critical challenges of loss of species. Like in regional trade, ecosystems maintain their robustness when species are able to move freely based on their range of needs. The survival of many of Africa's iconic species like the cheetah, giraffe, and wildebeest can be enhanced through the regional expansion of their range. Similar approaches are needed for the management of water basins, forest biomes, and rangelands. Ecological integration will be a central aspect of Africa's sustainable development objectives. [76]

---

74 Lloyd, J. et al. 2017. *The Rightful Place of Science: Climate Pragmatism*. Consortium for Science, Policy & Outcomes, Tempe, AZ, USA.

75 Raworth, K. 2017. *Doughnut Economics: Seven Ways to Think Like a 21st Century Economist*, White River Junction, VT, USA.

76 Juma, C. 2017. *Game Over? Drivers of Biological Extinction in Africa*. Paper Presented at the Workshop on Biological Extinction: How to Save the Natural World on Which We Depend, Political Academy of Sciences and Pontifical Academy of Social Sciences, Vatican City, February 27-March 1.

Agenda 2063 projects improved governance, democracy, human rights, justice, and the rule of law. Concerns about peace and security, which are the subject of various regional bodies, feature prominently in Africa's long-term outlook. Cultural bonds, common heritage, shared values, and ethics are seen as important elements in connecting the diverse peoples of the continent. One important element of the vision is the focus on human development and the emphasis on women, youth, and childcare. Finally, Africa aspires to play a larger role on the global scene.

These are ambitious goals whose implementation will take considerable effort. The difference between the next 50 years and the last is that Africa has a lot more experience to draw on based on its own regional experiments. In fact, the elements of Agenda 2063 reflect the lessons Africa has learned since independence. These aspirations will not only enrich current regional integration efforts, but they will also become a basis for new integration activities.

The continent's regional integration is the most complex and elaborate effort of its kind ever mounted in human history. It is an exercise in intellectual courage and is being pursued through peaceful diplomatic means. Africa is a large territory that is three times the size of the United States, which creates a wide range of challenges when managing regional activities. The Democratic Republic of the Congo, which is at the center of the continent, is as large as Western Europe. This geographical scope of the continent is often overlooked when assessing Africa's governance and management efforts.

Under such circumstances, the tendency has been to focus on a small part of the continent and refer to it as "Africa." This geographical escapism is so pervasive that often Africa is equated with a collection of villages, and the prevailing thought is those who have been to one village have been to all of Africa. Regional integration is both about geography and institutions. It is not uncommon to hear arguments of cost-effectiveness as an encumbrance to institutional diversification in Africa. Those who make this point rarely examine the opportunity costs of the paucity of development institutions, especially at the regional level. Much effort is wasted through proxy activities such as regional conferences instead of institution-building.

The future of Africa will be one of growing institutional complexity with many layers and epicenters of action. Managing this complexity will require a new generation of professionals. Some of the capacity will emerge through practice, but this cannot be a substitute for deliberate efforts to train people to manage large-scale institutions. Training facilities, such as universities, need to be incubated by regional organizations. They will complement national training programs and create their own layer of regional integration.

One of Africa's primary economic goals is changing its peripheral place in the global economy where it is valued largely for its raw material exports. It is not just the fluctuations in commodity prices that pose continuous risks to Africa's economic prospects but the larger challenge of focusing on raw materials, which is a volatile market. This focus has persisted at the expense of investment in human resources. International agencies reinforced this view and defined Africa as a continent whose people were only worthy of receiving support for primary education. Nothing higher was expected of Africa from those custodians of international development.

Africa is turning its attention to key sources of economic transformation such as science and technology, infrastructure, technical training, entrepreneurship, and regional market expansion. This shift is not only going to change the way Africa seeks to position itself on the global scene, but it will also redefine its international relations. For example, much of Africa's trade cooperation has been buttressed by its aspirations to expand its physical infrastructure as a foundation for development. This shift will also influence the patterns of human resource development in Africa and lead to increased emphasis on technical and engineering fields. This in turn will lead to new forms of international partnership in science, technology, and education. Regional integration will not just change Africa, but it will also alter the way the rest of the world relates to the continent.

Conclusion

The creation of catalytic institutions is a necessary but insufficient condition for success. What is important is ensuring that these institutions provide the motivation needed to enable people to implement a shared vision.[77] The guiding principles for such a common purpose are laid out in Agenda 2063. The implementation of the elements of the vision, however, will require continuous upgrading of the competence of the African people. There is no better option than to focus more attention on human resource development. Over the first 50 years of postcolonial existence much attention was paid to the importance of Africa's natural resources and how they could be leveraged to advance human wellbeing. Little will be achieved without greater investment in improving mastery in the population. Africa's catalytic institutions will need to focus on this priority, especially given the youthful nature of the continent. The final source of motivation for action is the autonomy needed for people to innovate without excessive constraints, especially those arising from government control. It is acknowledged that such autonomy is essential for unleashing Africa's entrepreneurial potential. But such potential does not only lie in the private sector. Entrepreneurship—viewed as the ability to generate innovation—needs to be nurtured in all spheres of human endeavor. It is only by nurturing the capacity to innovate that Africa can effectively build resilient economies that show the rest of the world that there are alternatives to being caught in an equilibrium bubble.

77 Pink, C. 2010. *Drive: The Surprising Truth about What Motivates People,* Canongate Books, New York.

Science, Technology, and Globalization Project
Belfer Center for Science and International Affairs
Harvard Kennedy School
79 John F. Kennedy Street
Cambridge, MA 02138

www.belfercenter.org

Copyright 2018, President and Fellows of Harvard College

Printed in the United States of America

About the Authors

Calestous Juma served as Professor of the Practice of International Development, and was affiliated with the Belfer Center for Science and International Affairs, the Center for International Development, and the Mossavar-Rahmani Center for Business and Government.

Juma was a widely acclaimed academic whose research and writing focused on science, technology, and environment, and on the ways in which they could be harnessed to improve the lives of people. He won multiple international awards for his work on sustainable development, and was named among the 100 Most Influential Africans for 2016 by New African magazine.

Francis Mangeni is a development and economic integration practitioner, currently working as Director of Trade and Customs of the Common Market for Eastern and Southern Africa (COMESA), focusing on evidence-based policy in the areas of trade in goods and services, customs and trade facilitation, and economic relations with other regional organizations and development partners. His initiatives incorporate innovation, research, and capacity building.

His work is based on a developmental approach to economic integration, which equally prioritizes large markets, industrialization, infrastructure, agriculture, and rural reforms. He has experience with various governments and international organizations, including the African Union, as Senior Economist and Regional Trade Adviser. Mangeni's efforts assisted Africa's trade negotiations with the World Trade Organization and the European Union and facilitated domestic trade and investment policy reforms.