

The Green Economy and Africa's Economic Transformation: A Balancing Act

Abdalla Hamdok*

Abstract

Two approaches underpin the current policy debate on African development trajectories: conventional structural economic transformation and transformation linked to the green economy. While structural economic transformation is readily appreciated and practised, the green economy has been greeted by mixed reactions between supporters and opponents. The opponents argue that, in the African context, as in the historical experiences of other regions, rapid economic growth is most likely to contribute to environmental degradation and increased pollutants and effluents from industrialisation and technological change. The supporters do not discount the possibility of leapfrogging to the use of less polluting green technologies and alternative energy sources. The gulf between the two in the viability of the green economy is ever increasing. However, Africa needs to reinvigorate the optimism and euphoria energised by the United Nations Conference on Sustainable Development – also known as Rio +20 on Green Economy in the Context of Sustainable Development and Poverty Eradication. Combining structural transformation and the green economy requires a balancing act that satisfies the need for ensuring that economic growth is both transformative and environmentally sustainable. On the other hand, such structural economic transformation is premised on a green economy capable of reducing environmental degradation and protecting the environmental life support system (air, water and nutrients/soils).

Résumé

Deux approches basées sur la transformation structurelle économique conventionnelle et celle liée à l'économie verte constituent le fondement du débat politique en cours sur les trajectoires de développement en Afrique. Même si la transformation structurelle économique est facilement appréciée et pratiquée, l'économie verte est accueillie avec des réactions mitigées entre

* Deputy Executive Secretary and Chief Economist, United Nations Economic Commission for Africa. Email: ahamdok@uneca.org

ceux qui y adhèrent et ceux qui s'y opposent. Ces derniers défendent que dans le contexte africain, à l'instar des expériences historiques dans d'autres régions, une croissance économique rapide contribuera certainement à la dégradation de l'environnement et à l'accroissement des polluants et déchets découlant de l'industrialisation et du changement technologique. Ceux qui défendent l'économie verte préconisent la possibilité d'un grand bond en avant vers l'usage de technologies vertes moins polluantes et des sources alternatives d'énergie. L'écart entre les deux sur la viabilité de l'économie verte grandit de plus en plus. Cependant, l'Afrique a besoin de raviver l'optimisme et l'euphorie qui ont émané de la Conférence des Nations unies sur le Développement durable- connue aussi sous le nom de Rio +20 sur l'Economie pour le développement durable et l'éradication de la pauvreté. Une combinaison de la transformation structurelle et de l'économie verte implique un travail d'équilibrage qui prend en charge le besoin de s'assurer que la croissance économique est aussi bien transformative que protectrice de l'environnement. D'autre part, une telle transformation de la structure économique est basée sur une économie verte capable de réduire la dégradation environnementale et de protéger le système qui supporte la vie environnementale (air, eau and nutriments/sols).

Introduction

I am sure many Africans will ask what green economy has got to do with us. We did not create global warming and nothing we do is going to affect its future trajectory much. We are unlikely to be the source of new technology green or otherwise. So what indeed has green economy got to do with us? Why should we think of introducing green technologies which could be more expensive than the alternatives? Why shouldn't we simply concentrate on growth and transformation and leave the green thing to those who created the problem in the first instance and who can afford to embark on a new and largely untried course? (Zenawi 2011).

The above quote from the late Prime Minister of Ethiopia, Meles Zenawi, not only addresses the issue of the green economy and places it in the proper African context, but helps in clearly problematising the concept. There are however, many compelling reasons for Africa to embrace the green economy. African economies are highly dependent on natural resources. However, with a fast rate of resource depletion being witnessed across the continent, the potential for growth is reduced. Hence, a transition to a green economy makes sense given the high dependency on natural resources and the heightened vulnerability from climate change impacts and other forms of environmental degradation. A green economy is essentially about identifying ways in which environmental risks can be tempered, reduced

and managed by counter-investing in resource conservation and enhancing resilience of natural stock and assets.

In an attempt to engage the debate on green economy, this paper is divided into four sections: introduction; review of the academic and policy debates on the green economy, with particular reference to their relevance to Africa; an elucidation of the recent achievements of the drive for African economic structural transformation and its documented environmental impact; a review of African experiences with green economy and whether they are actually delivering on the promise of protecting the environment while also generating socio-economic goods and services; and finally the conclusion summing up the major findings.

Structural Transformation and the Green Economy Debate

The purpose of this section is to introduce the salient issues which have dominated the policy debate on the green economy and its relevance to Africa, within the context of Africa's current economic orientation towards structural economic transformation. Such an exercise requires, by necessity a synoptic delineation of structural transformation and the green economy as a precursor to engaging the policy debate.

In the African context, structural transformation is defined by the United Nations Economic Commission for Africa (ECA) as an informed policy objective which connotes some or all of the following elements, which I quote at length for clarity of purpose. Economic transformation is precisely associated with:

- a fundamental change in the structure of the economy and its drivers of growth and development;
- a reallocation of resources from less productive to more productive sectors and activities;
- an increase in the relative contribution of manufacturing to GDP;
- a declining share of agricultural employment relative to total employment;
- a shift in economic activity from rural to urban areas;
- the rise of a modern industrial and service economy;
- demographic transition from high rates of births and deaths (common in underdeveloped and rural areas) to low rates of births and deaths (associated with better health standards in developed and urban areas); and
- rise in urbanisation (ECA 2013).

These policy objectives are treated in a number of key contributions to the crystallisation of the concept, whose birth emanated from the failure

of externally-driven policy to propel economic growth in many African countries during the 1980s and early 1990s. During this period, the dominant policy prescriptions privileged rolling back the state, promoting the free market and assigning the private sector a greater role in the economy. The Structural Adjustment Policies followed by the Washington Consensus are better known as representations of the neoliberal ascendancy which gave rise to the proliferation of a large and diverse array of literature. Clearly, these policies were hardly transformational in any positive sense, apart from setting back Africa's industrialisation drive in the immediate post-independence era. The critique of these policies is well known both at policy and academic levels and there is no need to rehash it here.¹

A major critique of the mal-transformative development policies of the 1980s and 1990s is their weakening of the role and capacity of the state in creating an enabling environment for development, exemplified by an onslaught on planning in general, and industrial planning in particular, which left most African states adrift, lacking in long-term policies and largely incapable of steering their economies away from stagnation and dismal economic growth. Naturally, the critique of the dominant development paradigm represented a quest for the return of the state as a major player in the economy. The paradigm shift from rolling back the state to the recognition of the importance of state intervention heralded a new era, this time under the banner of building states that are both developmental and democratic. The developmental state is by necessity interventionist and duly transformative by emphasising industrialisation and rapid economic growth.

To be sure, 'bringing the state back-in' also meant the return to planning, which in some countries culminated in the rise of African developmental states premised on a new paradigm emphasising structural transformation consistent with some of the features outlined by ECA (2013). By and large, these policies resonate with the new development thinking injected by Justin Lin's (2012) contributions on New Economic Transformation. The importance of Justin Lin's work stems from at least two factors: first it is an academic work of high quality linking research and policy; second, it provides developing countries with policy instruments soundly different from Structural Adjustment Policies and the Washington Consensus, which were largely speculative stunts that had never been tried in the developing countries. New Structural Economics is based on the experiences of several industrially advanced societies and newly industrialising countries such as the Asian Tigers, China and India.

In common with Africa's structural transformation policies, Lin calls for a robust role for the state in developing countries to protect their

nascent industrialisation in order to transform economies from agrarian to industrial. He argues that:

At each given level of development, the market is the basic mechanism for effective resource allocation. However, economic development as a dynamic process entails structural changes, involving industrial upgrading and corresponding improvements in 'hard' (tangible) and 'soft' (intangible) infrastructure at each level. Such upgrading and improvements require an inherent coordination, with large externalities to firms' transaction costs and returns to capital investment. Thus, in addition to an effective market mechanism, the government should play an active role in facilitating structural changes (Lin 2012).

Rooted in the neoclassical approach to the study of the determinants and dynamics of economic structure (Lin 2012), Kuznet contends that:

'sustainable economic growth cannot happen without structural change' (Kuznet 1966, quoted in Lin 2012:3). More strongly still that 'All countries that remained poor have failed to achieve structural transformation, that is, they have been unable to diversify away from agriculture and the production of traditional goods into manufacturing and other modern activities' (Lin 2012).

In the case of Africa, Lin (2011) is of the opinion that: 'agriculture continues to play a dominant role, accounting for 63 per cent of the labor force. Its share of manufacturing in 2005 was lower than in 1965'.

The unorthodoxy of ECA's (2013) policy position on structural transformations which stipulates the necessity of the development of a modern industrial and service economy augurs well with the thrust of the academic debate (Polanyi 2001; Syrquim 2006; Timme 2008; Lin 2010, 2011). For the purpose of this discussion it suffices to lament Africa's rise as a direct result in new orientations of African development policies towards structural transformation.

As mentioned in the opening of this article, a parallel development of academic and policy debate has focused on a two-fold critique: first, that Africa's structural transformation should be agrarian-led because Africa does have considerable comparative advantages. This debate is an extension of policy propositions which called for tapping the agrarian sector for economic growth. An implicit drawback of this critique is that Africa's economies should continue for an unspecified period to be agrarian-based and shrug any attempts towards adding value through industrialisation. The second critique is associated with green economy advocates from both academic and policy domains. Their argument is a distinctive part of the propositions which opt for Africa's continuation as an economy dominated by agriculture, with better chances for preserving the environment and

safeguarding against increasing pollution through accelerated urbanisation and industrialisation.

The question is: what is green economy vis-à-vis structural transformation and are they compatible? First, green economy means different things to different audiences. For some, the green economy is the clean energy economy, consisting primarily of four sectors: renewable energy (e.g. solar, wind, geo-thermal); green building and energy efficiency technology; energy-efficient infrastructure and transportation; and recycling and waste-to-energy (Gordon and Hays 2008). For others, such as Chapple (2008)

the question is how to generate economic activity that preserves and enhances environmental quality while using natural resources more efficiently. These definitions sum up the debate which is divided between those who support free market environmentalism whereby the environment in its totality can be subjected to market principles. The idea here is that sustainable environmental regeneration requires huge financial and technological investments, which only the combined efforts of corporations and governments can attain (Anderson and Leal 2001).

The counter view is that sustainable development and environmental conservation are public issues, have their own intrinsic value and therefore should not be subjected to the rules of the market. The precautionary principle rather than rash decisions based merely on economic principles, should be the determinant factor in pursuing a green economy (O'Riordan and Cameron 1994). The salient features of the debate are used to inform different policy trajectories, and likewise exhibit various, and at times contradictory policy prescriptions.

Some green economy policy orientations represent a new way of enhancing employment and creating jobs through massive investment in, for example, green cities, alternative energy (wind, solar, bio-gas, etc.) and other intervention such as low energy agricultural production in Europe and North America. For such policymakers and the business interests which inform their policy direction, green growth refers to 'job creation or GDP growth compatible with or driven by actions to reduce greenhouse gasses' (Huberty, Gao and Mandell 2011).

What is interesting here is the strong affinity between particular policy orientation and academic or theoretical antecedents, thus reflecting the coming together of green economy epistemologies and policy communities and their critics.

The critics of green economy focus their attention on its efficacy by arguing that: 'there is nothing to be said against the development of renewable energies or a reduction of resource use'. Yet, it is crucial to ask how this

should be achieved and whose interest is served. The Green Economy is based on power-confirming technologies, which affirm centralised, corporate forms of energy production and supply. The Green Economy is masking exploitation and power relations. The social dimension is reduced to a question of growth, green jobs and poverty reduction' (Buku 2012).

These questions are important because they buttress the need for a political debate. Some green economy critics consider it as an attempt to depoliticise an issue that is political to the core. If green economy is about losers and winners, naturally the question that follows is what is the position of the developing countries and particularly Africa in respect to these questions?

How Africa should respond to the green ecology principle and practice within the context of structural transformation cannot be concluded without exploring how Africa fares in this debate which includes the supporters and opponents of the efficacy of green economy within Africa.

The Nexus Between Green Economy and Structural Transformation

A common critique of African structural transformation policies is what is perceived as their lack of environmental policy frameworks, legal and administrative instruments. One result of this is that Africa's rapidly growing economies have also experienced considerable environmental degradation. This argument should not come as a surprise to analysts of the relationship between development and the environment and the manner in which rapid economic growth the world-over has resulted in some environmental degradation, even in today's highly industrialised countries (Munasighe 1999; Nhamumbo et al. 2010; Wilson 2013 and Borel-Saladin 2013). To expect African economies to be structurally transformed without any environmental impact is demanding too much from the continent.

None of Africa's environmental problems are new or traceable only to the last decade of relatively rapid economic growth. These problems are associated with commonly known factors such as rapid population growth and urbanisation, an increase in pollutants and emissions, extractive industries and an increase in the use of fertilizers and chemicals. These can be explained as follows.

The rate of urbanisation in Africa is the highest in the world, and is resulting in the rapid growth of urban agglomerations throughout the region. By 2030, the proportion of Africa's urbanized population is expected to reach 53.5 per cent, compared to 39 per cent in 2005 (compiled from WRI 2005). Urbanisation places severe strain on the environment, infrastructure,

and public amenities, as well as inducing changes in consumption patterns. Signs of air pollution, congested roads and slums with poor water, housing and health are in evidence throughout the continent, particularly in the rapidly growing economies. The growth of manufacturing industries within and around the towns and cities without proper environmental impact assessment, self-regulating practices or labour protection against environmental hazards in the workplace is commonplace.

The environmental impact of Africa's rapidly growing mining industry is well documented (Van Straaten 2000; Veiga 1997; Warhurst 1994), but it is not a problem unique to Africa, as almost all mining industries are polluting, particularly when no precautions are made to abate them. For example, pollution results from radioactive substances in uranium mining. Polluted waste water used for extracting minerals such as gold and copper causes poisoning, tumours and different types of disease. Clearance of forests for mining sites, transport or the creation of security often causes deforestation and loss of sources of livelihood for the rural population. Such negative impacts have been reported in Sierra Leone, Liberia, Sudan, Eritrea, South Africa, Tanzania, Angola, Nigeria, Chad and Cameroon. Although diamond mining is supposed not to use hazardous materials, it has been reported by the World Diamond Council (2011) that in addition to land degradation, this poses challenges related to energy use, emissions and bio-diversity loss.

The environmental problems associated with oil production have also been documented and cannot be attributable to recent oil discoveries and production techniques. That the so-called resource curse and such discoveries have contributed to conflicts in many parts of the continent is not new. For example, oil pollution and distributional justice are largely responsible for the conflicts in the Niger Delta of Nigeria, and the Sudan and South Sudan and intra-South Sudan conflicts, among others (e.g. Brunnschweiler 2008; Karl 1997; Kharaka and Dorsey 2005). It is also reported that offshore oil and gas industries have negative impacts on marine life and fisheries which are sources of food (ibid.). Oil and gas drilling and refining result in air and underground water pollution, water effluents and solid waste production (Mariano 2014).

The factors which contributed to the current upward trend in accelerated environmental degradation in Africa are a result of cumulative environmental management which has occurred over decades, if not centuries. Likewise, it cannot be explained away as unimportant that the current unprecedented levels of economic growth should not continue or be suspended until environmental degradation is abated. In other words, striking a balance between environmental protection and economic

growth is the only way out. This is mainly because the main problem is not economic transformation, but the laxity with which environmental regulations and protection policies have been treated. It has been explained in terms that economic growth and environmental protection should be coupled lest economic growth itself will not be sustainable in the long-run. Therefore, the emergence of the debate on greening the economy with some African countries striving to craft policies premised on this ethos can partly be attributed to the realisation of its implications both for the future of the sustainability of African development and the environment. Hence, the next question is: are African green economy experiences leading towards achieving this end?

African Green Economy Experiences

'Green economy to the rescue' is a call which has been heeded albeit reluctantly, by some African countries. The experiences of these countries are important for other countries to draw lessons from. Another pivotal aspect of these experiences is that they reveal that there is no single path to the green economy.² Different countries have adopted policy trajectories that are suited to the environmental conditions as well as the level of their socio-economic development.

The evidence presented in this section of the paper is drawn from several recent publications focusing on assessing the green economy in a number of African countries. The finding corroborated from these studies and my participation in various forums and discussions of green economy are intended to offer an evidence-based insight into nine African experiences, namely Benin, Cameroon, Ethiopia, Ghana, Morocco, Mozambique, Namibia, Nigeria and South Africa (Almas Heshmati 2014; GIZ 2013; Kacgwa et al. 2013). Table 1 shows the major green economy policies adopted and intervention pursued in these countries. Four observations can be teased out.

First, the nine countries have adopted green economy policies which reflect the socio-economic and environmental conditions available to them, thus reflecting a set of fundamental developmental problems. Low middle income countries such as Nigeria, Namibia, South Africa and Ghana, which are also mineral producers, focus on climate change, and energy efficiency, renewable energy and environmentally friendly technology. Investments in these areas are proportionately higher than, for example, investments in natural resource management and sustainable agriculture, forestry and fisheries combined (Kawagga et al. 2013; Farouk 2012; Borras and Franco 2010; Borras, Fig and Franco 2011).

Table 1: Post-2005 Green Economy Policy Orientations and Interventions in Seven African Countries

| No. | Country | Main green economy policy instrument (post-2005) | Green economy intervention highlights |
|-----|----------|---|--|
| 1 | Benin | Not developed a green economy plan, but what is referred to as green economy strategy is the National Strategy for Rural Markets of Wood Energy. | Sustainable development and climate change adaptation and reduction of carbon emissions, tax incentives for the use of solar energy and energy efficient motorcycles. |
| 2 | Cameroon | No dedicated green economy plan; however, its green economy interventions are built into its National Environment Management Plan (PNGE) adopted in 1996 and reviewed in 2011; as well as the country's National Energy Action Plan for the Reduction of Poverty (PANERP) and its Ecology Waste Management Strategies and integrated Water Solutions. | Use of local renewable energy sources (solar and hydro) in meeting the energy needs of the population, particularly in rural areas, including setting up the Rural Energy Fund in 2009; Increasing investments in viable forest management, including through the Green Sahel Project (2007); improvements to rail networks and reduction of pollution. Designation of 30% of the national territory as protected areas. |
| 3 | Ethiopia | Ethiopia's Climate-Resilient Green Economy Strategy (CRGE); Forest Carbon Partnership Facility, Readiness Preparation Proposal and Solar and Wind Energy Utilization and Project Development Scenarios. These are reflected in the Green Economy Strategy and Growth and Transformation Plan (GTP) (2011-2015) presented in Durban in 2011. | The hydropower generation for development and export and solar and wind energy; and tax exemptions for investment in green technology. |
| 4 | Ghana | National Climate Change Policy Framework (NCCPF); Ghana Goes Green Growth Strategy (2010); and Low Carbon Development Strategy (LCDS), National Energy Policy of Ghana; Renewable Energy Act. | Climate change, poverty reduction, sustainable use of forests, wildlife and land, with a substantial community-based natural resources management. |

| | | | |
|---|--------------|---|---|
| 5 | Morocco | Inclusive Green Growth Development Policy; Charter on the Environment and Sustainable Development (adopted in 2011); and also signed the 2012 Declaration on Green Growth of the OECD (in 2012). | Reinforcement of environmental governance, including through building environmental sustainability considerations in interventions in key sectors such as energy, water, tourism, agriculture and fisheries. |
| 6 | Mozambique | Strategic Program on Climate Resilience (SPCR), Mozambique Action Plan for Green Economy (MAPGE), and a host of national environmental plans, acts and legislations. | Flood control, bio-fuels, green extractive industries and the green utilisation of marine, fisheries, forest and land. |
| 7 | Namibia | Namibia has a host of over 50 environmental policies, acts and legislations which together are referred to as the environmental policy frameworks. Recently, it established the Namibia Green Economy Coalition and produced a Green Economy Sectoral Study (2011). | Renewable energy (solar) and biodiversity and bio-trade, protection of national capital, pollution control and waste management. |
| 8 | Nigeria | Nigeria does not have one national policy, instead it has a number of sectoral policies on Erosion, Flood Control and Coastal Zone Management; Environmental Sanitation, National Environmental Sanitation Action, Guidelines on: National Policy on Forests; Biodiversity Strategy and Action Plan etc.. | Climate change mitigation and adaptation, introduced national resource accounts to assess the contribution of environmental resources such as forests, fish, wildlife, water and minerals to the economy. |
| 9 | South Africa | National Framework on Sustainable Development, Medium-Term Strategic Framework, National Climate Change Response, National Strategy for Sustainable Development. | Focus on the energy sectors such as renewable energy, clean coal initiative, solar heating systems, bio-fuels, carbon tax, waste recycling, reuse and recovery and green technology, natural resource management, agriculture, transport. |

Source: Compiled by the author from each country's environmental plans, policies, acts and legislations.

Secondly, all countries, regardless of socio-economic level and environmental conditions, focus on economic growth and poverty reduction as policy objectives and interventions. However, in most cases, in reality, economic growth is generated from non-green economy activities. The so-called green economy interventions are at a nascent level and none of these countries are in a position to transition from the current production sectors because, first, they do not have the requisite financial and skilled human resources; and second, adopting green technologies requires radical changes in the production patterns currently pursued without being sure that the alternative will deliver employment, economic efficiency and comparative advantage over industrially advanced countries.

Third, without exception, none of the nine countries have a track record in achieving the basic requirement of sustainable development, with the emphasis on sustainability. For the majority, the policies adopted are treated as an extension to already existing or new sustainable development interventions. Apart from South Africa, which has invested more in green business than all other eight countries combined, the rest are geared towards modest investments in conventional natural resource management and community based natural resource management activities.

Fourth, countries where large proportion of the population has no access to electricity (Benin, Ethiopia, Namibia) have adopted various mixes of renewables. Ethiopia and South Africa have invested in wind energy, while Benin, Namibia, Ethiopia and South Africa have invested in solar energy and offered incentives and tax breaks to solar panel importers and manufacturers. Cameroon and Ethiopia have stepped up investments in the construction of more hydro-electricity dams, taking advantage of their abundant hydraulic endowments. Morocco has evolved fiscal policy aimed at targeting activities that are detrimental to the environment, such as the use of plastic bags and the extraction of sand. The Moroccan government also envisages increasing investments in green technologies and industries in sectors such as aquaculture and ecotourism, which offer employment opportunities in rural areas.

To sum up, African green economy initiatives are rather new, few and most are not yet sufficiently developed to a level where they can be reckoned with as the main drivers of the economy or job creation. In this respect, the few case studies presented in this section are not meant to be representative of the costs and benefits of green economy, but rather to illustrate that while green economy undoubtedly has some discernable economic benefits, it also has some social and environmental drawbacks. The type of investments and the sectors prioritised for investment are often those

with power to influence policy and the choices policy makers make. These choices, as mentioned earlier, are contingent on the level of development and the environmental or energy concerns confronting a country.

Conclusion

Contrasting the debate on the green economy and its implications for current African development trajectories in terms of opponents and proponents is useful only for magnifying the differences their positions may imply for charting the most appropriate policy orientation. In reality, however, pragmatism rather than ideological rigidity is the defining factor in the policy decisions undertaken by all nine countries whose green economy policies have been introduced and only briefly discussed here.

Obviously, green economy policies are complex, traverse several sectors and respond to many issues which might not seem green from the outset. At the same time all nine countries have integrated their medium and long-term growth, development and structural transformation plans and their green economy policies. Some countries have not promulgated a unifying document on green economy but refer to the host of environment and sustainable development policies as indicative of their new orientation towards a green economy.

Both in terms of transformative growth policies and green economy trajectories, there is an obvious return to the state, economic growth, transformative growth and planning. 'Command and control' policies rather than self-regulating firms and enterprises are in evidence. This is justifiable in two respects: first African businesses (or any business for that matter), with few exceptions, are known for circumventing environmental regulations; and second, African states have no experience with the technical and legal intricacies of green economy. In both cases an enlightened interventionist state might yield better results in regulating green economy activities and steer them towards achieving national sustainable and equitable economic growth goals. The return of the state, including developmental states such as Ethiopia, Namibia and South Africa should be understood more from structural transformation objectives and less from a policy orientation that would transform the economies of the countries into green economies. Whatever position African states adopt, they must find a balance that is expected to deliver both on buoyant economic growth and sound environmental sustainability, through green growth or any policy mix that is deemed appropriate to their socio-economic development and the environmental conditions available to them.

Notes

1. For example, UNCTAD (2001: 7) reported that: ‘De-industrialisation, at least in some African countries, appears to have been associated with trade liberalisation and the decline of state-owned enterprises which, in many countries, had constituted the major segment of large-scale industry. As things stand now, industrial growth in SSA is becoming more and more dependent on agricultural growth either through backward linkages or through demand originating from rural population.’
2. For example, Heshmati (2014: 2) lamented the fact that, ‘Green Economy can be viewed from various perspectives. These include, among others, nature and political economy, economic sustainability and security, Green political and system theory and renewable resources and conservation’. Another important perspective treats green economy as green business.

References

- Anderson, T. and Leal, D. R., 2001, *Free Market Environmentalism*, Basingstoke: Palgrave Macmillan.
- Auth, K., 2014, ‘Ethiopia’s Renewable Energy Revolution Shouldn’t Fail to Empower Its Poor’, *The Guardian*, available at <http://www.theguardian.com/global-development-professionals-network/2014/jan/30/ethiopia-renewable-energy-project>, accessed 1 September 2014.
- Borel-Saladin, J. M. and Turok, I.N., 2013, ‘The Green Economy: Incremental Change or Transformational’, *Environmental Policy and Governance* 23: 209–20.
- Borras, S. M. and Franco, J. C., 2010, ‘Towards a Broader View on the Politics of Global Land Grab? ICAS Working Paper Series, Transnational Institute (TNI), Amsterdam.
- Borras, S. M., Fig, D. and Suarez, S. M., 2011, ‘The Politics of Agrofuels and Mega Land and Water Deals’, *Review of African Political Economy* 38 (238): 215–34.
- Brunnschweiler, C., 2008, ‘Cursing the Blessings? Natural Resource Abundance, Institutions, and Economic Growth’, *World Development* 36: 399–419.
- BUKO, 2012, ‘After the Failure of the Green Economy: 10 Theses of a Critique of the Green Economy’, Working Group ‘Societal Relationships with Nature’ (GesNat) of the Federal Coordination of Internationalism (Bundeskoordination Internationalismus), Bonn: BUKO.
- Chapple, K., 2008, *Defining the Green Economy: A Primer on Economic Development*, Berkeley, CA: University of California Center for Community Innovation.
- ECA, 2013, ‘Economic Transformation for Africa’s Development’, available at http://www.uneca.org/sites/default/files/uploaded-documents/Macroeconomy/africaeconomictransformation_en.pdf
- Escribano, A., Luis Guasch, J. and Pena, J., 2008, ‘Impact of Infrastructure Constraints on Firm Productivity in Africa’, Africa Infrastructure Country Diagnostic Working Paper, Washington, DC: World Bank.

- Farouk, F., 2012, 'The Green Economy in Sub-Saharan Africa', in Netzer, N. and Althaus, J., eds, *Green Economy Turing a New Leaf towards Sustainable Development*, Berlin: Friedrich Ebert Foundation.
- GIZ, 2013, 'Green Economy in Sub-Saharan Africa: Lessons from Benin, Ethiopia, Ghana and Nigeria', Berlin: Government of Germany.
- Heshmati, A., 2014, 'An Empirical Survey of the Ramifications of a Green Economy', Institute for the Study of Labor (IZA [German abbreviation]) IZA DP No. 8078.
- Hove, M., Ngwerume, E.T. and Muchemwa, C., 2013, 'The Urban Crisis in Sub-Saharan Africa: A Threat to Human Security and Sustainable Development', *Stability* 2(1): 1–14.
- Huberty, M., Gao, H. and Juliana, 2008, 'Shaping Green Economic Growth: A Review of the Public Debate and the Prospects for Green Growth', Green Growth Leaders: Berkeley.
- Lin, J., 2012, 'New Structural Economics: A Framework for Rethinking Development and Policy', Washington, DC: World Bank, available at <http://siteresources.worldbank.org/DEC/Resources/84797-1104785060319/598886-1104951889260/NSE-Book.pdf>.
- Kaggwa, M., Mutanga, S.S., Nhamo, G. et al., 2013, 'South Africa's Green Economy Transition: Implications for Reorienting the Economy towards a Low-Carbon Growth Trajectory', South African Institute of International Affairs, Economic Diplomacy Programme, Occasional Paper No. 186.
- Karl, T. L., 1997, *The Paradox of Plenty: Oil Booms and Petro-States*, Berkeley, CA: Berkeley University Press.
- Kharaka, Y. K. and Dorsey, N.S., 2005, 'Environmental Issues of Petroleum Exploration and Production: Introduction', *Environmental Geosciences* 12 (2) June: 61–3.
- Kitula, A. G. N., 2006, 'The Environmental and Socio-Economic Impacts of Mining on Local Livelihoods in Tanzania: A Case Study of Geita District', *Journal of Cleaner Production* 14: 405–14.
- Mariano, 2014, 'Environmental Impacts of Oil and Gas', Encyclopedia of Environmental Support System.
- Mitchell, D., 2011, *Biofuels in Africa: Opportunities, Prospects and Challenges*, Washington, DC: World Bank.
- Molony, T. and Smith, J., 2010, 'Biofuels, Food Security and Africa', *African Affairs* 109: 489–98.
- Munasighe, M. 1999, 'Is Environmental Degradation an Inevitable Consequence of Economic Growth: Tunneling through the Environmental Kuznets Curve', *Ecological Economics* 29: 89–109.
- Nhamtumo, I. and Salomano, A., 2010, *Biofuel Land Access and Rural Livelihood in Mozambique*, London: International Institute of Environment and Development.
- O'Riordan, T. and Cameron, J., 1994, *Interpreting the Precautionary Principle*, London: Earthscan.
- Polani, K., 2001, *The Great Transformation: Politics and Economics Origins of Our Time*. Second Edition, Beacon Press: Boston.
- Resnick, D.F.T. and Thurlow, J., 2012, 'The Political Economy of Green Growth:

- Cases from Southern Africa', *Public Administration and Development* 32: 215–28.
- Syrquin, M., 2006, 'Structural Transformation', in Clark, D.A., ed., *The Elgar Companion to Development Studies*, Cheltenham: Edward Elgar Publishers.
- Timme, C. P., 2008, 'The Structural Transformation and the Changing Role of Agriculture in Economic Development: Empirics and Implications', Available at http://iisdb.stanford.edu/pubs/22133/Timmer_wendt_lecture.pdf
- UNCTAD, 2001, 'Economic Development in Africa: Performance, Prospects and Policy Issues', Geneva: United Nations Conference on Trade and Development (UNCTAD).
- Van Straaten, P., 2000, 'Human Exposure to Mercury due to Small-Scale Gold Mining in Northern Tanzania', *Science of Total Environment* 259 (1–3): 45–53.
- Veiga, M.M., and Beinhoff, C., 1997, 'UNECA Centers: A Solution to Reduce Mercury Pollution from Artisanal Gold Mining Activities', *UNEP Industry and Environment* 20 (4): 49–52.
- Warhurst, A., 1994, 'Environmental Degradation from Mining and Mineral Processing in Developing Countries: Corporate Responses and National Policies', Paris: Development Centre, OECD.
- Wilson, M., 2013, 'The Green Economy: The Dangerous Path of Nature Commoditization', *Journal of Sustainable Development* 10(1): 85–98.
- World Resources, 2005, *The Wealth of the Poor: Managing Ecosystems to Fight Poverty*, The World Bank and World Resources Institute.
- Zenawi, M., 2011, 'Green Economy and Structural Transformation in Africa', Key-note Address at the African Economic Conference, Addis Ababa.