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of Commonwealth
Universities

UNIVERSITY OF IBADAN, NIGERIA
CENTRE FOR SUSTAINABLE DEVELOPMENT
www.cesdev.ui.edu.ng

POLICY BRIEF

ISSUE 5 NUMBER 1
AUGUST 2019

Climate Change and Socio-ecological Transformation in Africa: Implications for Sustainable Development and Policy Prescriptions

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INTRODUCTION

The complexity of the challenges and opportunities of climate change in the context of socio-ecological transformation in Africa can be diagrammatically represented in the anthropogenic (human-induced factors) space. (Figure 1). This human-induced relationship can enhance or limit progress towards the achievement of the sustainable development goals (SDGs). The nexus aptly shows the challenges to socio-ecological transformation as increased climate which poses as obstacles to development while the opportunities of climate change and socio-ecological transformation are typified as reduced climate with implications for contribution to development. For instance,

increased climate change resulting from changing weather patterns and extreme weather events would lead to shortage of natural resources like water. Water shortage in hydroelectric power capacity or for irrigation impedes development in the sense that it results in low industrial capacity, food insecurity, hunger, high food prices and poverty.

IMPLICATIONS FOR SUSTAINABLE DEVELOPMENT AND POLICY PRESCRIPTIONS

Table 1 indicates the corresponding challenges of climate change and opportunities for socio-ecological transformation through the four dimensions (and five pillars) of sustainability. For instance, climate change-induced social sustainability challenges include shortage of resources, vulnerability to flooding, spread on disease, conflict, food insecurity, high food prices, land used to grow crops for bio fuel instead of food, changing weather patterns and extreme weather events, unnecessary car use, unplanned migration, deforestation, energy consumption, water shortages, and decrease in hydroelectric power capacity. On the other hand, climate change-induced social sustainability opportunities for socio-ecological transformation include diversified income sources, women's empowerment, reliable power supply, renewable energy, reduced competition and conflict, tree nurseries, solar drying of fruits, alleviation of related health problems through health insurance, reforestation, afforestation. Overall, the opportunities are policy prescriptions for enhancing sustainable socio-ecological transformation in Africa.

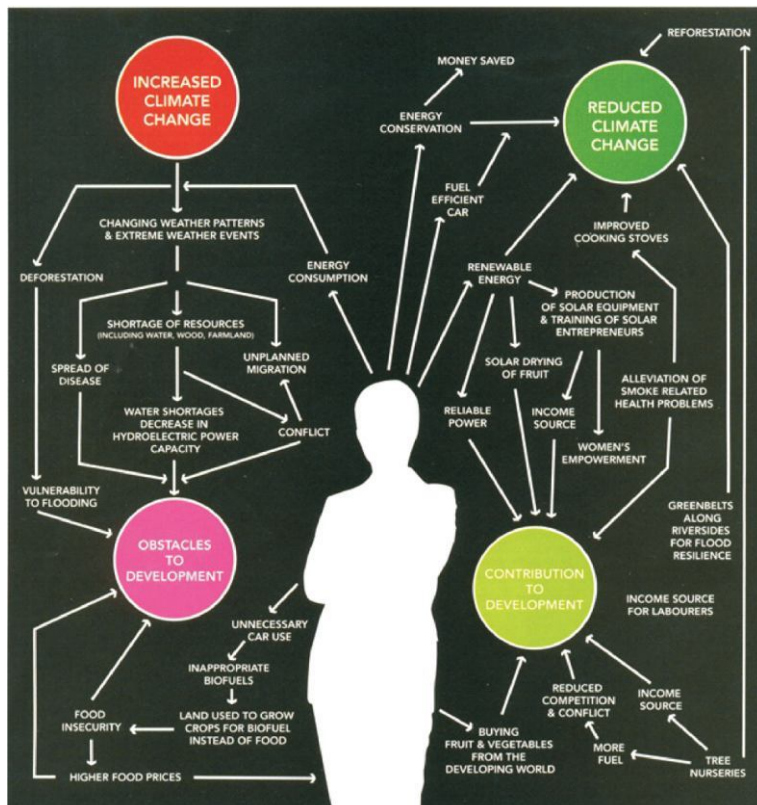


Figure 1. Framework of analysis of climate change and socio-ecological transformation
Sources: Developments Magazine (2009); Olayide (2018)

TABLE 1. SYNTHESIS OF CHALLENGES OF CLIMATE CHANGE AND OPPORTUNITIES FOR SOCIO-ECOLOGICAL TRANSFORMATION

Social (People)	1. End poverty in all its forms everywhere	Shortage of resources, vulnerability to flooding, spread on disease	Income sources, women's empowerment, reliable power, reliable energy	10. Reduce inequality within and among countries	Conflict, changing weather patterns and extreme weather events
	2. End hunger, achieve food security and adequate nutrition for all, and promote sustainable agriculture	Conflict, food insecurity, high food prices, land used to grow crops for bio-fuel instead of food, vulnerability for flooding, changing weather patterns and extreme weather events	Reduced competition and conflict, tree nurseries, income sources, solar drying of fruits, green along riverside for flood resilience	11. Build inclusive, safe and sustainable cities and human settlements	Shortage of resources, vulnerability to flooding, unnecessary car use
	3. Attain healthy life for all at all ages	Shortage of resources, unnecessary car use, food insecurity, spread of disease	Alleviation of related health problems	12. Promote sustainable consumption and production patterns	Shortage of resources, deforestation, food insecurity
	4. Provide equitable and inclusive quality education and life-long learning opportunities for all	Conflicts, unplanned migration	Reduced competition and conflicts, women's empowerment		
	5. Attain gender equality, empower women and girls everywhere	Conflicts	Women empowerment		
	6. Secure water and sanitation for all for a sustainable world	Shortage of resources, changing weather patterns, deforestation	Green along riverside for flood resilience, reforestation, afforestation		
	7. Ensure access to affordable, sustainable, and reliable modern energy services for all	Energy consumption, water shortages, decrease in hydroelectric power capacity	Fuel efficient cars, improved cooking stoves, reliable power, renewable energy, more fuel, energy conservation		
Economic (Prosperity)	8. Promote strong, inclusive and sustainable economic growth and decent work for all	Higher food prices, energy consumption, unplanned migration, shortage of resources	Reliable power, women's empowerment, production of solar equipment and training of solar entrepreneurs		
	9. Promote sustainable industrialization	Energy consumption, conflict, shortage of resources	Renewable energy, reliable power		

Socio-ecological transformation involves human and nature interactions. Socio-ecological transformation in Africa would require focusing development priorities on sustainability issues, including developing green economy pathways. The sustainable development goals (SDGs) offer the potential for development that is climate resilient. The SDGs are classified into four dimensions (and five pillars), including social, economic, environmental and governance sustainability. While governance is recognised as a cross-cutting issue in sustainability, the other three dimensions (social, economic and environmental sustainability) can be decoupled and administered based on each country's established institutions – Ministries, Departments and Agencies (MDAs). The MDAs have established policy framework of administration, monitoring and evaluation, including measurement, reporting and verification.

Developments Magazine. 2009. All change: Fighting Climate Change and Poverty. Developments Magazine Issue 46. Department for International Development (DFID).

Olayide, O.E. 2018. Understanding the Context of Climate Change and Socio-ecological Transformation in Nigeria. In *Climate Change and Socio-ecological Transformation in Nigeria: Challenges and Opportunities*. Published by Friedrich-Ebert-Stiftung, Nigeria. Pp 1-16.

CITATION

Olayide, O.E. 2019. *Climate Change and Socio-ecological Transformation in Africa: Implications for Sustainable Development and Policy Prescriptions*. University of Ibadan Centre for Sustainable Development, Ibadan, Nigeria. 4 pages.



About CESDEV

The University of Ibadan Centre for Sustainable Development (CESDEV), www.cesdev.ui.edu.ng, was established by the University of Ibadan, Nigeria in May 2010 as a demonstration of the University's commitment to Sustainable Development. CESDEV aims at integrating economic, social, cultural and environmental objectives in development. The Centre provides an avenue for advance interdisciplinary training and education in sustainable development for Sub-Saharan Africa through an integrated and multidisciplinary approach that incorporates both international and local knowledge.



About IMAGES

The Interconnections for Making Africa Great, Empowered and Sustainable (IMAGES) Initiative is a not-for-profit and non-political organisation focused on advocacy, research and public education on varied issues relating empowerment and sustainable development in Africa. It strives to advance the course of the Sustainable Development Goals and Africa Agenda 2063 through Research, Advocacy, Field Trips, Conferences, Seminars, Policy Roundtables Workshops, Symposia, Summits, Exhibitions, and Communications through Policy Briefs, Communiques, Quarterly Newsletters and Social Media Platforms.



About FES

The Friedrich -Ebert-Stiftung (FES) is the oldest political foundation in Germany with a rich tradition in social democracy dating back to its foundation in 1925. The foundation owes its formation and its mission to the political legacy of its namesake Friedrich Ebert, the First democratically elected German President. The work of our political foundation focuses on the core ideas and values of social democracy - freedom, justice and solidarity. This connects to social democracy and free trade unions. As a non-profit institution, the organisation works autonomously and independently.

The Association of Commonwealth Universities

About ACU

The Association of Commonwealth Universities (ACU) is dedicated to building a better world through higher education. International collaboration is central to achieving our mission of building a better world through higher education. By bringing universities together from around the world – and crucially the people who study and work within them – we help to advance knowledge, promote understanding, broaden minds, and improve lives. We champion higher education as a cornerstone of stronger societies, supporting our members, partners, and stakeholders as they adapt to a changing world.

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Google Scholar Citation Page: <https://goo.gl/17E7dl>
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