

"Saving Lake Chad and the Rejuvenation of Africa: Beyond the imaginary"

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Abstract

Within the context of the transformational possibilities of the radical Pan African imagination, this intervention examines principal areas of reconstruction with focus on canal systems and water transfer schemes as means to integrate the water resources of Africa to replenish the continent and to unite Africa. Given the deleterious effects of global warming on Africa, especially in the Lake Chad Basin region, audacious efforts to *Save Lake Chad* through interbasin water transfer from the Congo is timely in improvements to the ecosystem and biodiversity of the region and repair this part of Africa. There are four major initiatives for the rejuvenation of Africa: water harvesting and storage, planned irrigation and Polyfunctional agricultural areas, the Great Green Wall across the Sahara and a system of canals to use the surface and ground water to transform the economic realities of Africa.

In the context of the urgent discussions of COP21, there was the international rollout of the Great Green Wall for the Sahara and Sahel Initiative (GGWSSI) in December 2015. Later in February 2018, after decades of discussion and studies, there was a commitment at the International Conference on Lake Chad in Abuja to build an interbasin water transfer system which would take water from the right tributary of the River Congo, conveying the water in a 2,400km channel to Chari River in order to replenish Lake Chad. The studies by Bonifica and CIMA International and the MoU with PowerChina have revealed the technical and economic feasibility of this water transfer scheme.

Inevitably, the conceptualization and execution of projects of this sort will witness differences among policy makers and intellectuals. Social scientists such as Claude Ake and Adebayo Adedeji had provided the intellectual inspiration for other African scholars to conceive of robust plans for the integration of Africa which is now manifested as Agenda 2063. Their scholarship is distinguished from the double speak of sustainability that emanates from the market philosophies that seek to place a price on water in Africa. Now there is the necessity for political will, clarity and substantial intellectual mobilization to make the canal project a reality.

Of the four major projects for rejuvenation, the canal systems have amplified the momentum for thinking through long-term implications of real cooperation across the imposed borders. Since the hydraulic civilization in Egypt (from the 4th millennium BCE), waterways have anchored the transformation and improved quality of life of many peoples. Drawing from ancient and contemporary canal systems—the Grand Canal System of China, the Venice Canal, Saint Lawrence Seaway, and the Panama Canal—we argue that the Congo-Chad water transfer scheme is central to the Nkrumist radical vision of the integration of Africa, the development of new cities, and the utilization of the energies of the youthful population in Africa for transformation in the era of the bioeconomy.

Keywords: Political will, Canals, Bioeconomy, Transformation, Pan Africanism, Unification

Introduction

The thesis of this paper is based on the requirement of the research work and political will needed to plan for the full unification of Africa, using the principal resources of nature, water, sun and air in integrated canal systems. Of these resources, the importance of human interventions to reconstruct and transform Africa emerge as there is an urgent necessity to harness the resources of nature in a way that can replenish the earth and save the planet for future generations. In the specific context of this conference where there is the focus on “**Security, Governance and Sustainable Development**” it will be the proposition that the intellectual foundations of liberalism and its successor, neo liberalism, cannot be the framework for the teaching and research work necessary for the rejuvenation of Africa. It has been more than forty-five years since Walter Rodney wrote, *How Europe Underdeveloped Africa* (Rodney 1972). Since that intervention, countless African scholars have critiqued the Bretton Woods program of structural adjustment and its derivative tranquilizing conceptions of ‘governance and development.’

The late Claude Ake had made a sterling contribution to an understanding of contemporary imperialism in his important study, *Social Science as Imperialism: the theory of Political Development* (Claude Ake 1982). This author has also written elsewhere that there was a need for the demilitarization of the social sciences in Africa (Campbell 2014). There, I had argued for a new chapter of the social sciences for liberation to break from the anti-African basis of western social science that depicts Africans as failures. In a similar tradition, Professor Adebayo Adedeji had worked tirelessly to promote Africa’s self-reliant path to transformation and was one of the thinkers behind the Lagos Plan of Action, one of the plans that preceded the Constitutive Act of the African Union. Professor Adedeji had joined together with African economists such as Samir Amin who battled to liberate African development policies and strategies from the tyranny of received paradigms (S.K. B Asante 1991, Samir Amin 2004). In the work of Samir Amin there was the clarity that it was impossible to separate western militarism and development models from the domestic agenda and the national interests of the United States. These interests support a branch of finance capital which is dominated by the financial oligarchy. Michael Hudson deepened this understanding of the interests of Wall Street and global insecurity with his tract on *Finance as Warfare* (Hudson 2015).

Professor Adedeji had promoted a holistic and self-reliant conception of economic change and served to break the liberal views that there were stages of growth with the attendant consequences of domination and conquest. Hence, a conceptual approach that was people centered formed the base of African thinking about social and economic relations. From this emerged the concept of Ubuntu, which links humans to nature and to a shared humanity. A refinement of the philosophical basis of Ubuntu will be central to the break with the dominant Cartesian ideas of domination, separation and compartmentalization.¹ This task of Saving the Lake cannot be undertaken with the same capital-o-centric and extractive mindset and actions that generated the process of the drying up of Lake Chad. This massive project cannot be conceptualized outside of a new approach to Pan African Unity: the shared water resources along with the principle that the wellbeing of peoples in one part of Africa should be the concern of those in other parts of Africa, and indeed Africans everywhere.

From this Pan African principle, one would then seek to grasp the centrality of the Lake Chad Basin ² and the Congo Basin ³ as two key resources in the heart of Africa that should be working together for the health and rejuvenation of Africa. Comprising more than a fifth of the African territory, both of these basins contain the treasures of the bio economy and serve as the lungs of Africa, which assist in the sustenance of life across the whole planet (although our argument here is not for another externally-driven environmental intervention in Africa on the grounds that the African continent is part of the “global commons”). Just as the lungs provide the oxygen for the heart to support a healthy body, so the lungs of the African rainforests can be used via canal systems to become the bloodstream to oxygenate Africa. One of the most daring proposals for this oxygenation comes in the form of a robust canal system to transfer water from the Congo basin to the Lake Chad Basin in order to reverse the dying of Lake Chad. Lake Chad, which was once one of Africa’s major fresh water sources, has reduced in size by over 95 per cent. In 1963, the size of the Lake was 25,000sq km, today it is 2,000sq km (2018). Replenishing Lake Chad has thus emerged as a priority project to guarantee the survival of Africa and her peoples. In fact, it is now said that Lake Chad is Ground Zero for Global Warming.

As the planning to Save Lake Chad has evolved over the past forty years, the foresight of the signers of the Fort Lamy Convention to establish the Lake Chad Basin Commission (LCBC) ⁴ will now have to be reinforced by the clarity that there will be the need for a popular awareness of the tasks of Saving Lake Chad in the same way as there was an awareness of the tasks of decolonization that emanated from the radical pan African imagination. While the peoples resident in the immediate vicinity of the Lake are living with the everyday consequences of the drying up, this reality has not been readily communicated by policy makers in the Lake Chad Basin region. Popular awareness and mobilization will be crucial however, to support the necessary work to Save Lake Chad. That awareness of an earlier period of mobilization which had inspired Pan African cooperation beyond the Berlinist states is now growing given the realities that the increase in average world temperatures over 2 degrees Celsius (3.6 degrees Fahrenheit) above the pre-industrial era will alter the global climate system drastically. Environmental activists in Africa have graphically outlined that a 2°C global average would mean 3°C–3.5°C or more for Africa. In the words of Nnimmo Bassey and Desmond Tutu, it will lead to the ‘cooking of the continent’ and its condemnation to incineration and no modern development.

It is this reality that has inspired many sections of the Pan African community to draw attention to the fact that inaction in relation to global warming is not an option. The Lake Chad Basin occupies a strategic link between the northern parts of Africa, which continues to be harshly impacted by climate change and global warming, and the rainforest of Central Africa which should be protected against any possible future advance of the visible effects of these environmental challenges. An increase in the surface area of Lake Chad will lead to an increase in rainfall in the Lake Chad Basin especially in the areas Northern Lake Chad and contribute to accelerated revegetation of the borders of the Sahara. Thus, Saving Lake Chad has to be conceived of as part of a larger process of Saving Africa and reversing the possibilities of incineration. It is in this regard that the abundance of clean water, clean air and massive sunlight can be major assets in reversing the destruction of the planet earth. This presentation will argue that it will be essential to connect all three elements in order to rebuild Africa and to improve the quality of life for all of the citizens.

Nearly every major international publication on development in Africa laments the consequences of the unequal integration of Africa into global capitalism in which Africa has an abundance of resources yet the peoples are mired in impoverishment and low quality of life. Usually, these lamentations, especially from the development agencies and international financial institutions start from the position that Africans have to ‘develop’ and be more integrated into the current global economy. The conceptual trap associated with the models of economic relations inherited from Europe since the era of enslavement, colonialism and apartheid remain mostly un-interrogated. In the absence of this interrogation those with access to policy makers promote ideas about economic management that reproduce the conditions that has created the crisis in relation to global warming and the attendant consequence of insecurity and low respect for African lives. In order to turn this challenge of global warming into an opportunity for the reconstruction of Africa, it will be necessary to go back to the ideas of Kwame Nkrumah that were communicated at the founding meeting of the Organization of African Unity in 1963. Then he stated that,

“We must Unite for economic viability, first of all and then to recover our mineral wealth in Africa, so that our vast resources and capacity for development will bring prosperity for us and additional benefits for the rest of the world. That is why I have written elsewhere that the emancipation of Africa will be the emancipation of man.” (Nkrumah 1963)

In this paper we will lay out some of the great possibilities that await a new direction for Africa in the context of cooperation at the global, African and sub-regional level to save Lake Chad. This project, at a minimum, requires basic literacy of what is at stake for everyone in the drying up of Lake Chad. Thus, within the context of a meeting of Nigerian social scientists it is necessary to drum home the elementary facts: loss of livelihood, insecurity, loss of biodiversity, increasing deforestation and desertification. If nothing is done in the medium-term the Sahel will advance further south.

The anomaly of the Lake drying up while further South in the Congo Basin there is massive amounts of water reinforce the foresight of Kwame Nkrumah, Cheikh Anta Diop and the Pan African ancestors that the future of Africa has to be conceived of in a project of unification. Current challenges and opportunities point to the centrality of the Chad Basin and the Congo River Basin for the unification process. These same opportunities also highlight the limitations of the planning that has sought to rigidly define the future infrastructural projects along regional divisions of the regional economic communities of the African Union.⁵ Planning to Save Lake Chad is also compounded by the monetary and trading regimes that seek to criminalize those peoples of the Lake Chad and Congo Basins who are already cooperating by the free movement across imaginary borders.

Hence, the question of the political will to Save Lake Chad and the consciousness about Pan African cooperation will affect the approaches to the question of Saving Lake Chad. Already the feasibility studies and the review of the conceptual approaches will unearth the ideation systems that inform the policy environment in relation to Saving Lake Chad. In particular, this review of the approaches will need to examine the conclusion of the French researchers and policy makers on the basis of the recorded rainfall in the 1990s, who contend that Lake Chad should be allowed to naturally return to the size it would want to assume.⁶

Currently, it is impossible to ignore the effect of high variability in the climatic condition and where in a typically favourable year this Lake could recede from its shores over 2km west and 1km east of the remaining 2,000 square kilometers. Within these contexts, it is difficult to reject the need for a more proactive effort to raise the lake to a level that could make it more sustainable. It is within such audacious effort that this paper examines the opportunity within the framework of water transfer scheme, and more specifically canal system with its ultimate aim to replenish Lake Chad. In opposition to this plan to rejuvenate Africa, there are researchers and scholars, who argue that,

“Contrary to the dominant media image of a Lake Chad environmental and socio-economic crisis, the current situation of Lake Chad (1991-2014) is relatively favourable to the local populations.”⁷

Such a conclusion has influenced a number of agencies such as the International Bank for Reconstruction and Development (IBRD-World Bank) and UNESCO and has been the logic of those who promote schemes for ‘resilience’ (a term that has become a neoliberal favorite for highlighting people’s abilities to persevere in the face of great obstacles, therefore allowing for the perseverance of the economic and political status quo). The unfavorable situation to both humans and animals are being felt to the point where the militarization of the Lake Chad region has led to the necessity of the governments of the LCBC to link the question of Saving Lake Chad to the question of insecurity and loss of livelihood. The shift of the headquarters of the Multinational Joint Task Force from Baga in Nigeria to Ndjamen to the HQ of the LCBC was recognition that the planning for water transfer and saving the Lake required peace. The conclusion of the paper will add that peace, unification and the union government of Africa are essential prerequisites for Saving Lake Chad and reversing global warming.

Saving Lake Chad in the Context of the bio economy

The region of Central Africa with the states of the Chad, Cameroon, the Central Africa Republic, Gabon, the Republic of the Congo, Democratic Republic of the Congo (DRC) comprises an eco-region that is the richest in Africa in terms of biological diversity and has one of the lowest deforestation rates in the world. The rain forests of eastern DRC are one of the few forest zones in Africa to have survived the ice age and thus are particularly rich in biodiversity. The difference between the biodiversity of Northern Chad, which falls within the belt of Africa that is called the Sahara and eco-region just below it, is striking. It is within this area of Central Africa where the Lake Chad is drying up. There is thus a stark difference between the Southern Areas of Central Africa and the areas north of the Lake Chad Basin. The DRC alone contains about half of all true tropical forests found in Africa and about 10% of those in the world. According to the International Commission for Congo-Ubangi-Sangha basins (CICOS) the forest resources of the Congo Basin are substantial, consisting of 100 million hectares of moist tropical forests within a total forest area of 243 million hectares. The forests are home to more than 10,000 plant species (some 3,000 of which are known to be endemic) and to 409 species of mammals and 1,086 species of birds.

About half of the DRC is covered by the most extensive undisturbed rain forest zone in Africa, part of the vital lungs of the planet earth. The rainforest supports an astonishing range of life, within its roaring rivers, swamps and savannahs. But it also helps to sustain life across

the whole planet. An estimated 8% of the earth's carbon that is stored in living forests worldwide is stored in the forests of the DRC, making the country the fourth largest carbon reservoir in the world. The Congo Basin rainforest plays a critical role in regulating the global climate and halting runaway climate change for the benefit of the entire biosphere. The majority of the country's biotic communities, vegetation types, and endangered species are probably included within its eight national parks which include the largest tropical forest park in the world and cover 3.6% of the country's territory.

The water resources of the Congo are also considerable and holds one sixth of the hydroelectric potential of the earth. With a length of 2,900 miles (4,700 km), this water system and wetlands, which is usually called the Congo River, contains one of the largest bodies of water in Africa and is the second longest river (after the Nile). As a truly African asset transcending the Berlinist boundaries, this river "rises in the highlands of northeastern Zambia between Lakes Tanganyika and Nyasa (Malawi) as the Chambeshi River at an elevation of 5,760 feet (1,760 metres) above sea level and at a distance of about 430 miles (700 km) from the Indian Ocean. Its course then takes the form of a giant counter clockwise arc, flowing to the northwest, west, and southwest before draining into the Atlantic Ocean at Banana (Banane) in the Democratic Republic of the Congo" ⁸ Crossing the equator twice in its journey tumbling to the Atlantic Ocean, this mighty force is fed with heavy rainfall throughout all or almost all of the year. "Its drainage basin, covering an area of 1,335,000 square miles (3,457,000 square km) takes in almost the entire territory of that country as well as most of the Republic of the Congo, the Central African Republic, eastern Zambia, and northern Angola and parts of Cameroon and Tanzania. With its many tributaries, the Congo forms the continent's largest network of possible navigable waterways" ⁹ Two of its tributaries, the Kasai and the Ubangi are among the longest rivers in Africa and a robust canal system with dykes and locks that could ensure navigability all year round would also control the flooding and allow for more focused irrigation system. Despite this considerable amount of water more than 50 million Congolese are without potable water. This is the place where clear water storage and harvesting schemes are needed.

A review of the literature on the ground water resources of Africa will expose the impossibility of forcing an understanding of the water resources of Africa within a conceptual framework that is based on the current borders (UNESCO 2004). Concepts of water 'governance' and the price of water that have been deployed stand in sharp contradiction to the conceptions of water spirits and sharing that have guided the ideation systems of humans for centuries. All pre-capitalist societies (called tributary societies by Samir Amin) contemplated on the spiritual qualities associated with the energies from water (Samir Amin 1989). Malidoma Some in his book, *Of Water and the Spirits* emphasized the healing qualities of water and how the water spirits transmit the energies of peace, quietness, reconciliation and healing. It is also known that water can carry the wrath of the spirits with floods. Water spirits such as Idemili (mami Wata) and Nyami Nyami in Africa supply the gift of life and in many communities water is sacramental. All humans need water for drinking, washing, cleaning, cooking, and growing our food. In this sense water is fundamental for the sustenance of life. The democratic distribution of water is therefore crucial for the rejuvenation of Africa.

Vandana Shiva in her book on *Earth Democracy* distinguishes three different economies: nature's economy, the sustenance economy and the market economy (Shiva 2005). According to Shiva's analysis, nature's economy can be seen as the first economy, the base of the house

on which the other economies rest. The nature economy serves as the foundation and Shiva argues that it is out of this economy where products and services are produced and reproduced on a massive scale (water, soil fertility, plants, oxygen, and more) through a complex network of ecological processes that is so interdependent and complex that it is not fully understood. A global bioeconomy must build the natural economy and improve the quality of life for a growing world population. It should balance managing common goods, such as the sun, air, water and soil, with the economic expectations of the peoples of the planet. The Cartesian conception of dominion over nature turned the health of the natural environment upside down with the mining and pillaging over the past 300 hindered years held up as manifestations of progress and development.

“The currency in nature's economy consists of such things as biodiversity, cleanliness of water bodies, material measures of natural flow of ecosystems, ... When exclusive attention is given to the growth of the market, living processes become invisible externalities.”¹⁰

The second economy is that of the ‘sustenance economy.’ “In this second economy – mainly the women's economy – people create goods and services that provide the conditions necessary to maintain their lives: food, child care, shelter... It is the economy of two-thirds of humanity engaged in craft production, peasant agriculture, artisanal fishing, and indigenous forest economies. It includes all spheres in which humans produce in balance with nature and reproduce society through partnerships, mutuality and reciprocity. Childcare, for instance, is a community thing, based on transactions of mutuality and caring. This sustenance economy has given human societies the material means of survival by deriving livelihoods directly from nature (first economy). The organizing principles are: satisfying basic needs and ensuring long-term sustainability.”¹¹

One can immediately distinguish the difference between this gendered idea of economics and the ideals of sustainable development that is being promoted under the rubric of sustainable development goals. The conceptions of the market economy focus on ‘growth’ and profits, irrespective of the costs to humans and nature. Despite the recognized evidence of the impoverishment of the African peoples over the past forty years of western development initiatives (Ake 1982), Africans are being bombarded with similarly articulated plans such as the Millennium Development Goals (MDG) and its successor the Sustainable Development Goals (SDG).

Thus far these discussions about Saving Lake Chad have fallen under the rubric of the liberal concepts of ‘development’ and ‘resilience’. Thus there are three ideas that inform development paradigms:

(a) Western concepts of peace and pacification generated wars, genocide, militarism and violence in the Democratic Republic of the Congo and the region of Central Africa.

(b) Liberal ideas of the primacy of the short-term demands of profit perpetuated conditions favorable to plunder. It was a model of economics that separated people from their natural environments and a model of crude resource extraction that required very little infrastructural investment.

(c) Models of economic management since independence have been deepened to the point where they have become structural sources of the conditions conducive to warfare and

violence. The World Bank and the IMF were active partners in perpetuating models of resource extraction and rent seeking behaviour by local elites.

Jimi O Adesina, Adebayo Olukushi and Thandika Mkandawire have written extensively on the grim record of the deepened impoverishment in Africa despite (or because of) the shift from structural adjustment to poverty eradication and poverty alleviation exercises. From the moment of the partition of Africa, the concepts of making profits and unlimited access to the natural resources were related to the freedom of capital and the conditions of mass murder. The vast rubber resources of the country were plundered and in the process of ‘pacifying’ the Congo, the Belgians massacred over ten million citizens.¹² Adam Hochschild’s *King Leopold’s Ghost: A Story of Greed, Terrorism and Heroism in Colonial Africa* documented the forms of extra economic coercion and force that formed the basis of the western colonial project. These same relations were established throughout the twentieth century to exploit the vast gold, diamonds, copper and cobalt resources of the Congo. International agencies such as the IMF and the World Bank have abetted the plunder of the resources of the Congo. The alienation and absence from social reality can be gauged from the reports of the IMF and agencies such as the UN Environmental program (IMF 2015). The same UNEP assessment estimated the mineral wealth of the DRC as being over \$24 trillion. Yet, it is in this region where the principal raw materials exist for the rapid escalation of the Bioeconomy in the 21st century.

Harnessing water resources and Saving Lake Chad in the Bioeconomy

Thus far the technical documents and feasibility studies about the transfer of water or the resilience of the Lake Chad basin have been premised on the patterns of transport and industry within the fossil fuel era or the era of so called development. But, Auxillia Ponga, Permanent Secretary and Ministry of National Planning and Development of Zambia, has succinctly challenged the mainstream industrialization paradigm when he said that Africa needed a different pathway to economic reorganization and industrialization. In this challenge Ponga maintains that,

"Africa, as a late latecomer to industrialization, can avoid the default industrialization paradigm characterized by a "heavy reliance on natural resources, low productivity, high energy and material intensities" that contributes to the "high production costs that undermine the global competitiveness of Africa's industrial sector." Instead the continent "has a big opportunity to adopt alternative economic development-led pathways to industrialization, which in the long run "would be cheaper, more efficient and productivity enhancing."¹³

The Zambian official was rearticulating a position that had been held by Professor Adedeji who had assisted in the establishment of the United Nations Economic Commission for Africa (UNECA). Later occupants of the seat of the head of the UNECA have since carried forward the perspective that Africa must harness its resources to escape external domination. In its 2016 document on structural transformation and green industrialization UNECA noted the significance of an industrialization underpinned by the potentials of the bioeconomy that,

“the greening industrialization ensures that the structural transformation process avoids stranded assets; copes with accelerated urbanization; reduces resource inputs and increases efficiency in the production process; cuts back on harmful waste emissions, such as chemical effluents and poisonous gases; strengthens infrastructure to reduce

environmental impacts (such as pollution and extreme weather events); and maintains or improves the natural resource base, including providing associated environmental goods and services.”¹⁴

The position of the UNECA on Green Industrialization needs to be distinguished from the green neoliberalism or “greenwashing” that has now become part and parcel of the rhetoric about sustainable development. As David Harvey noted,

“Who does not want to live in a sustainable world? Who does not want a greener economy that promotes or invigorates economic growth while also preventing climate change, the dwindling of natural resources, food insecurity, the loss of biodiversity and ecosystems? In the last decade, green neoliberalism (i.e., the convergence of market forces and environmentally friendly logic) has permeated many aspects of our lives from wide-ranging eco-friendly products to corporate eco-manifestos to governmental agendas bolstering green jobs. Although there have been sincere green efforts (e.g., towards ecological protection), much of the sustainability rhetoric embodied in green neoliberalism and its variations of eco-capitalism, green consumerism, bio-economy and corporate eco-credentials often amount to more trumpeting than action. Green washing has been a perverse way to stimulate the market for more consumer goods and services.”¹⁵

The neo liberal ideals of the market can also be found in the emphasis on ‘sustainable development’ and the pressures to ensure ‘environmental sustainability’. ‘Yet, from the days of the ‘development decades’ to the Brundtland Report of 1987 the terms ‘sustainability’ and ‘development’ have been deployed without any effort on the part of the societies of the global north to change their patterns of consumption nor production. The international financial institutions continue to promote unbridled privatization and or public private partnerships while societies such as the United States reject the Kyoto Protocol. In effect the development agenda of the past twenty-five years have supported a particular set of social relations with increased ‘impoverishment. This impoverishment is manifest in the statistics of inequality across the globe.

It was in an effort to distinguish itself from green neoliberalism (i.e., the convergence of market forces and environmentally friendly logic) where the UNECA proceeded to outline the differences between linear conceptions of development and structural transformation. “Structural transformation based on green industrialization will not happen spontaneously. It needs coherent policies entrenched in a coherent development strategy, enlightened by transformative leadership.” (UNECA 2016)

The UNECA may have added that the policy makers in Africa need to have a coherent understanding of the emerging bioeconomy which is the sustainable production and use of biological resources, processes and principles to provide products and services in all economic sectors -Agriculture/Forestry/Fisheries, Food, Paper, Textiles, Building & Construction, Chemistry, ICT, Pharma... Plants, Microbes, Animals, Biodiversity, Biotechnology, and C” in CO₂, biological knowledge.¹⁶

Joachim von Braun, one of the leading German advocates for the bioeconomy, has been critiquing those who have sought to develop a sectoral analysis of the potential for the emerging bioeconomy and has argued that one cannot conceive of the bioeconomy in the old

compartmentalization of the economy. In making the argument about clusters instead of sectors of the economy, Von Braun was doing an auto critique of the European Bioeconomy panel that stated that, “the bioeconomy includes the production and use of renewable biological resources as well as economic activities, both within and between countries, related to the invention, development, production and use of biological products and processes. This includes the production of food and non-food agricultural crops, and the technological processes that turn them into food, feed, bio-based products, agrofuels, and bioenergy. More specifically, the bioeconomy encapsulates numerous sectors: agriculture, forestry, fisheries, construction, food processing, pulp and paper, biotechnology, environmental technology, industrial goods, textiles, chemicals and pharmaceuticals, and recycling and waste collection.”¹⁷

Carlos Lopes and the late Calestous Juma of Harvard University are two African thinkers who have reflected at great length on the major possibilities of the bio economy, green industrialization and the transformation of social and economic relations in Africa. When he was still at the UNECA as the Executive Secretary, Carlos Lopes said there is a golden opportunity for Africa. “The cost of producing energy from renewable sources is now equal in cost to production from fossil fuels.” He had stated that “Africa has the opportunity that has never been achieved in any other economy in the world, which is to grow in a clean way.”

Experts outside of Africa in Europe and North America recognize the great potential in the biological resources in Africa and the fact that with the proper investment in a new approach to social and economic planning, the twin processes of digitalization and biologization could provide the conditions for Africa to escape the promise of incineration and reverse global warming. It is in the context of this leap where the societies of the global South and specifically Africa can skip the forms of industrialization that has brought the planet to the present conditions of global warming. In 2016, Stockholm Environment Institute published, *Creating Sustainable Bioeconomies: The Bioscience Revolution in Europe and Africa*. Calestous Juma in his review noted that new opportunities for economic transformation are already being built on Africa’s abundant biological resources.

He continued,

Creating a new bioeconomy will involve at least five key elements: commitment to sustainability; identification of entry points and creation of innovation ecosystems; repositioning universities as innovation hubs; fostering innovation policies and leveraging quality science advice; and relying on science and technology diplomacy to build new international partnerships. The need to promote the sustainability transition in Africa provides the best policy context for the bioeconomy... Africa’s digital revolution started in isolated niches to use mobile phones to meet communications needs. The bioeconomy revolution can be started through a wide range of opportunities in agriculture, health and industry. Such technology niches can then be expanded to cover other supporting technologies and services to create regional innovation ecosystems. Viewed this way, every farm, fish processing plant or brewery is a potential starting for the new bioeconomy.¹⁸

Usually the advances in the bioeconomy are heralded in the north where the availability of electricity and heat are taken as basic rights. In Africa there are not enough incentives to turn research and innovation into practical uses. Recent breakthroughs in Liquid air energy storage (LAES) have shown the pathways to future energy storage in the hectic competition with lithium batteries and the innovations of Tesla. Already, innovators all across Africa are paying close attention to these breakthroughs in thinking through decentralized operations (especially for solar power) for the production and delivery of electricity. Energy for cooking, light, heating or air conditioning is now accepted as the basic requirements for a good quality of life. Yet, in the regions of the Lake Chad and Congo Basin most of societies lack basic access to clean running water, sanitation and electricity. In the DRC where there is the great hydroelectric potential, less than 13 per cent of the population has access to electricity (in a context of near-ubiquitous electricity for corporations). Of the countries of the Lake Chad Basin, only Libya (the most recent member of the LCBC) has electricity for the majority of the population. The access to electricity for the population ranges from 53 per cent in Nigeria to as low as 8 per cent in Chad. The table below presents a summary of access to electricity for the countries in the Lake Chad and Congo Basins.

Country	Population (Pop) in millions (2014)	%age Pop. in Urban areas	%age of Urban Pop. with access to electricity	%age Pop. in Rural areas	%age of Rural Pop. with access to electricity	%age of Population with access to electricity
Cameroun	22.8	48.76	86.5	51.24	22.2	56.8
Central African Republic	4.8	40	26.3	60	3.1	12.3
Chad	13.3	22	20	78	4.5	8.0
Congo Republic	4.6	65	60.8	35	10.4	43.2
Democratic Republic of Congo	71.2	42	42	58	0.4	13.5
Niger	18.2	18	53	82	5	14.3
Nigeria	177.5	47	78	53	39	57.7
Libya	6.3	78	100	22	92.3	98.4

Source: Data sheets and Reports covering population and electricity in the region¹⁹

As researchers on the bioeconomy advance the understanding of the potential, there is a realization that ‘Energy can be seen as the “glue” in the bioeconomy, due to the high energy requirements of modern economies and the physical interrelationships between energy and non-energy products and processes.’²⁰

In this region of the Lake Chad Basin and the Congo Basin there is the great potential of a mixed grid with the deployment of the hydroelectric prospects with the solar breakthroughs and new bio-based products.

“The bioeconomy will ultimately replace the fossil economy that is characterized by high reliance on non-renewable resources. At the same time, the bioeconomy will also replace the “natural economy” that is common in the developing world, where heavy reliance on subsistence farming and traditional biomass degrade the resource base with low economic returns. A sustainable bioeconomy is also fully compatible with a circular economy in that it aims for minimal waste and the optimal valorization of biomass across all its different uses.”²¹

Scholars in Africa working on the future of African integration have argued that transportation linkages and new arteries for the free movement of peoples will be central to making the breakthroughs necessary to a crucial node of the global bioeconomy to replenish the earth and improve the quality of life for a growing world population. It should balance managing common goods, such as air, water and soil, with the economic expectations of people. The availability of clean sources of water is central to this vision and it is to this question in the context of the canal systems that we now turn.

Water transfers and water storage

It is worth recognizing that canals and water transfer schemes are not strange engineering efforts in Africa. Terraforming or the deliberate effort to transform the natural environment had been practiced for thousands of years. In the past two decades the start of the building of the Great Man-Made River by the Libyan government under President Gaddafi represented one of the boldest efforts at terraforming and making the Sahara physically manageable to humanity.²² This plan, along with the plans for a Great Green Wall across Africa, started to arrest the spread of the Sahara. The plans to plant 8000 kilometers of trees across the continent reflected the determination in Africa to be proactive to reverse global warming. The past experiences of planting trees in countries such as Niger point to the fact that a neo liberal approach to the planting of trees will ensure the real estate developers and those who pollute the environment can and will reverse any possible benefits from planting trees.

Secondly and as important are the urgent need for water storage facilities in Africa. Increasingly, the importance of storing water on continental and local scale has been noted as one of the central part of improving the Earth’s climate system. Gravity Recovery and Climate Experiment (GRACE) satellite mission have provided opportunity to estimate terrestrial water storage (TWS) across continents. It is from these data that our understanding has been enhanced about Africa as the continent with the least water storage systems. Indeed, given the sparse space capabilities in Africa, the temporal and spatial variation of water on the continent is poorly known. Yet, from the little that is known about water in Africa, it is on record how the waters of Africa flow through the continent unharnessed despite the vast potential to save and utilize these waters to improve the African environment and the lives of its peoples. This waste of African waters is continuing to occur at a time where climate changes and the consequences of global warming are having deleterious effects on the environment and Africans. It is within these contexts of non-utilization of water storage

mechanisms that the consequences of the cycles of floods and drought across the continent could be better understood.

Water storage implies saving water at every level of society by employing available technologies and generating new ones that could facilitate the development of dams and reservoirs that should conserve water for future use. Scientists have argued that if Africa placed emphasis on water conservation systems and irrigation, agricultural productivity will be increased vis-à-vis environmental repairs and greening that could derive from the planned utilization of controlled waters. This potential for environmental repairs and the regeneration of the continent draws from the mutual reinforcement of the water storage and rainfall cycle; that is, store water, utilize water stored to irrigate the land in order to increase vegetation, the increased vegetation will in turn increase evapotranspiration, and increased evapotranspiration should lead to increased rainfall, and the consequent rains with its runoffs will be stored to continue the cycle. In this way Africa would escape the cycles of floods and drought, contribute to the repairs of the environment and re-green the continent.

Flooding of catastrophic proportions was common in the era before terraforming to the point where one of the most important stories in the Bible was the building of Noah's ark. What was not recounted in that text was the fact that the peoples of Africa developed the most sophisticated water transfer systems and canals to control the flooding of the Nile

It was the engineering and social requirements of organizing society to meet the disaster of flooding that had birthed the greatest of African transformations. In seeking to grasp the stability of this form of state over thousands of years, Cheikh Anta Diop had argued that the weight of civilian-power compared to military-power meant that a military aristocracy was almost absent in this form of state. The engineers and hydrologists were the most important administrators in this form of state, far more important than military personnel. An ideological superstructure was then developed around spiritual deities. One component of this ideological infrastructure was one of the most developed and systematic understanding of the relations between humans and nature. This knowledge system became the foundation of modern science and engineering.

This analysis of Diop is very different from the conclusions of the book on *Early Hydraulic Civilization in Egypt: A Study in Cultural Ecology* that accepted the view that a state based on hydraulic works led to despotism.²³ Diop had argued that the suddenness and volume of the flooding of the Nile obliged the African people either to rise above individual, clannish, and tribal egoism or disappear. Thus, emerged a supra tribal or national authority accepted by all. In such a society there was an abundance of resources and the people paid tribute to the rulers. The hydraulic state also had canal systems which were constructed not only for irrigation and flood control but also for navigation.

The Grand Canal of China also offers insight into how a whole area that is dry could be revived through a canal system and how a vast land settled by peoples with shared historical and ancestral experiences could be united for transformation. When the United States wanted to open its interior to trade, the construction of the Erie Canal became paramount to accessing the interior of the continent nation to accelerate trade. One hundred years later another mega water transport system was developed in the St Lawrence Seaway and a system of Canals linked the rivers and lakes of the Great Lakes to the Atlantic Ocean. Lessons from the canals

in Venice also show how the quality of life of a people could be enhanced through the utilization of a canal network.

From these historical perspectives, it is not difficult to understand the many benefits that a well examined and engineered water transfer scheme could portend for the transformation of vast areas. In the context of what is possible and doable, I draw attention to the even more contemporary projects elsewhere and also in Africa.

The Panama Canal (the 3 step-lock system canal), shows how with careful planning and political will almost every engineering work could be possible and achievable.²⁴ Within the context of possibility and political will to undertake impactful project it would not be difficult to understand why within Africa the Lesotho highlands project which included tunnel system through the highlands could be undertaken to facilitate farming in apartheid South Africa. This project at the time of its realization was third in succession only to the Three Gorges Dam of China and the Great Man-Made River project of Libya (Waites, 2000).

Contemporary research by scientists on the mega projects that are changing the face of societies noted that, “In the water sector, such megaprojects encompass interbasin water-transfer projects, large-scale wetland drainage and irrigation schemes, navigation canals, drinking water facilities and sewage treatment plants for large cities, large dams, flood control and coastal protection measures, and major restoration schemes”²⁵ Of the four major water transfer systems now under planning or construction all are to be found in the BRICS countries or countries of the global South: the South–North Water Transfer Project in China, The Indian Rivers Inter-link, the Sibiral project in Central Asia (from Siberia to the Aral Sea) and the Transaqua water Transfer from the Congo River to Lake Chad.

The current disputation about water transfer schemes in Africa and more particularly the Lake Chad water transfer system is occurring at the time when bold efforts are called for to reverse global warming and to develop plans to mitigate the effects of climate change. The potentialities of a canal system integrated into the bioeconomy and a smart grid will open up new possibilities for the blue economy and to achieve other benefits that water has to provide to the peoples affected by the proposed projects.

Given the ambivalence of the World Bank and European agencies, there are comparisons between the approach of these scholars from the Global North and the Global South to mega water transfer projects such as the Red Sea–Dead Sea Conveyance. This project, which has been greatly supported by the World Bank and Europe, has undergone public debates and contestations about the impact of transferring the water of the Red Sea to the Dead Sea on the environment that surrounds the canal for this project. Followers of these discussions would appreciate the fact that plans have been established including the building of desalination plants to mitigate the effect of saline waters of the Red Sea on the environment. These details are documented in the overview of the study program McPhail and Lintner(2013). This project is currently being financed by the World Bank and is one indication of the political priorities of the World Bank and multilateral agencies. The technical details of this water transfer system does not include the obvious fact that Israel is a nuclear state with nuclear weapons and one of the requirements of the facility is a constant supply of water.

Similarly, there has been increasing calls across the corridors of research and activism about the need to save the Aral Sea in Central Asia where through various massive irrigation

projects on the two main rivers that feeds that Sea has meant a reduction in the inflows and consequent drying out of large part of the Aral Sea.

In the case of Lake Chad the increasing shrinkage has been attributed less to the human usage. Instead it is the variation in rainfall that has affected the availability of water and the size of the Lake. Seepage to the groundwater has also been found to be insignificant (Isiorho et al., 1996; Magrin and Lemoalle, 2014). There is consensus however, about the impact of evaporation on the level of water. There is also the argument about 30 questions posed by the policy makers of CICOS and reproduced in the documents on future possibilities that water transfer could be increasing the rate of evaporation for the Lake. The increase in the evaporation rate, it is contended, would lead to the eventual retrogression of the Lake to the former small level. For proponents of this view the current evaporation levels found to be relatively minimal for the shrunk Lake is good for the Lake and therefore water transfer should not be an option. What they hesitate to add is perhaps the current Lake size with the attendant socio-economic problems in the Lake Chad Basin is good enough until the Lake finally dies and present even more catastrophic consequences for human livelihood and biodiversity in the region. What has been obvious, however, is the constant variability of rainfall pattern and the abysmal volume of rainfall in the Basin area which has meant that minor effects on the Lake combined with evaporation could contribute to increased shrinkage of this important Lake and therefore some action is required to ensure the stability of the Lake.

Methodological approaches to water transfer scheme in Africa.

The French and IRD Approach

From the period of imperial expedition, colonialism through independence, the French have produced many travelers and Geographers who have journeyed the path of Lake Chad through Nigeria, Niger or the Sahara Dessert.²⁶ It was from these travels and reports and scholarly articles that concerns for the increased shrinkage of Lake Chad became internationalized outside the African continent. Particularly, the Geographer Jeremy Tilho after a French expedition in the early 1900s, having observed the changing level of Lake Chad, predicted that the Lake could dry in the future if no efforts are undertaken to save it. This prediction though has not occurred after nearly three decades, there is evidence that the Lake had completely dried out before and could be non-existent should there be continuous drought for about four years.

In recent years, there has been some increase in rainfall in parts of the Lake area and this has served as one of the strong points for some French scholars. In one of his current articles, Geraud Magrin for instance contends that the discourse about the drying up of Lake Chad is a myth (Magrin, 2016).

More importantly the French, through its expert group review central to the government research agency called Institut de Recherche pour le developpement (IRD), produced reams of papers that contend vehemently against the discussion about water transfer in the current efforts to stabilize Lake Chad. Within the Sahel region, the IRD has been particularly active in establishing networks of scholars and non-governmental organizations to influence the intellectual debates on the future of Lake Chad. As recent as 2013 the Senate of France outlined a 500page document to spell out the military strategy of France in the area that was

determined to be “Europe’s neighborhood,” which included the zone “from the Sahel from Mauritania to the Horn of Africa” and other regions in Africa. President Sarkozy was most explicit in the need to topple the former leader of Libya in order to promote the military influence of France in Africa (Sarkozy’s own presidential campaign, we now know, was heavily financed by Gaddafi, and the French president had many nefarious reasons to eliminate the Libyan president).

In fact, there have been perceptions that the French had aimed to hinder attempts at feasibility study that could facilitate discussions about whether or not a water transfer scheme is possible for maintaining Lake Chad. Once the feasibility studies were produced, French scholars disputed the findings, claiming that the arguments made in favor of a major water transfer from the Congo to Lake Chad were inaccurate. In identifying four inaccuracies these researchers operated within the following parameters: (a) the hydrological diagnosis of the Lake (water-covered areas, whether or not it is drying out), (b) the impacts of global warming on the Lake (confirmed, presumed, or unknown), (c) the population affected by the variations in the Lake’s water level (whether they are directly or indirectly dependent on it), (d) the population’s economic situation (either an area in crisis or a land of milk and honey), the expected consequences, and the potential impact of a plan to transfer water from the Ubangi basin to the Lake, which has been under study since the end of the 1980s.

It is from this same mindset that we have had the World Bank position that water is a commodity with a price. Millions of dollars have been spent to propagate the idea that Africa is short of water and that water should be treated as an ‘economic good’ (John Briscoe 1996, Gibbons, D 1986). That mindset of the economic value of water contradicts the position of the United Nations Committee on Economic, Social and Cultural Rights that access to clean water should be a basic human right, that

The human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use. And adequate amount of safe water is necessary to prevent death from dehydration, reduce the risk of water-related disease and provide for consumption, cooking, personal and domestic hygienic requirements.²⁷

Despite this explicit position and the statements of the MDG to halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation- in the region of central Africa, the situation worsened for millions. In 2015 UNICEF reported that an average of 500 children per day were dying of diarrheal diseases linked to inadequate water, sanitation and hygiene. In September 2016, United Nations Member States committed themselves to ensuring access to safe drinking water and to sanitation in Goal 6 of the 2030 Agenda for Sustainable Development (SDG 6). They explicitly reaffirmed their commitment to the human right to water and sanitation in paragraph 7 of the Agenda’s declaration. This proclamation remained just that, a proclamation, in so far as the World Bank was supporting privatization of water that placed water outside the reach of millions. Moreover, in the case of Libya where there had been bold efforts to provide water through the Great Man Made River, NATO bombed the factory that produced the pipes for this mega project that aimed to provide water for the peoples in that country.

Since the NATO intervention in Libya and the energetic interventions of France to ‘fight terrorism’ in the Sahel region, the experience of the military leaders of the multinational joint task force has been that France has sought to undermine the efforts to bring water and sanitation in the region of Africa. Of the top ten water companies in the world, more than five are French. Many Africans are still unaware that French multinational companies such as Suez-Ondeo (France), Vivendi-Veolia (France), Bouygues-SAUR (France) are competing with other major European water companies such as RWE-Thames Water (Germany) and AWG- Anglian (Great Britain) to dominate water and waste water systems in the world.²⁸

Following the fear of gradual loss of Chad from the grip of the French and the collaboration Chad is having with the Chinese in recent times in the petroleum sector, France has adjusted its avowed opposition to the discussion about water transfer conscious that a Chinese company undertaking water transfer for the Lake Chad Basin could mean a complete loss of Chad to China (Magrin and Maoundonodji, 2012; Magrin, 2016).

These scholars and institutions, while admitting the high variability in the rainfall regime of the Lake Chad Basin, do not favour any bold efforts to transfer water to bring the Lake to a level closer to what were observable in the 1950s and 1960s. What have been constantly presented as solutions have focused more on mitigating the impacts of the shrinking of the Lake instead of saving the Lake.²⁹ The key formulation that is used to disguise opposition is ‘resilience.’ This formulation has figured prominently in the World Bank and UNESCO proposals, from PRESIBALT to BIOPALT.³⁰

From PRODEBALT to PRESIBALT to BIOPALT

The IRD (Institut de recherche pour le developement) had inspired the Lake Chad Basin Sustainable Development Programme (PRODEBALT), which had been rolled out by the African Development Bank in 2008. The declared objective of PRODEBALT was to ‘Sustainably reduce poverty among the populations living on the resources of the Lake Chad basin.’

After the six years of this program for ‘sustainable development’ when the peoples of the region were clearly poorer, the African Development Bank in December 2014 the Programme to Rehabilitate and Strengthen the Resilience of Lake Chad Basin Systems (PRESIBALT). PRESIBALT was launched at a moment when the World Bank was representing itself as a “*knowledge bank*” and the AfDb mimicking its intellectual fountainhead promoted this initiative as the source of knowledge management.

“PRESIBALT will facilitate the rehabilitation of all hydrometeorological networks of the basin and the establishment of robust simulation tools for rational water resource management.” So read the information produced by the consultants. “Furthermore, the programme was supposed to build LCBC’s capacities to optimally use the Regional Database (RDB) instituted by the Water Charter and finance basin water -resource - users fora for better information sharing. In parallel, an Early Warning System (EWS) and an agricultural information system was set up to prevent the risk of natural disasters. Lastly, PRESIBALT was premised on the setting up of an integrated knowledge -sharing system on the programme activities which will be regularly disseminated via the LCBC website in order to build on and manage the knowledge and experiences acquired.”³¹

Going by the results and consequences of the actions that translates to knowledge management it will be clear that PRESIBALT was only a little more than information gathering mission and this same posture has been adopted under the banner of Integrated Water Resources Management by UNESCO. By the time PRESIBALT ended its information gathering, UNESCO rolled out a new initiative called Biosphere and Heritage of Lake Chad (BIOPALT) with an additional task, that of promoting peace. This was the message that had been delivered months earlier by the Assistant Director-General for Natural Sciences at UNESCO, who had proclaimed in Abuja that the ‘Lake Chad biosphere reserve will promote regional peace.’

Basically, UNESCO will train 300 scientists, decision makers and community leaders in techniques of water resources management for the implementation of the BIOPALT project.

In the thinking of this author, Saving Lake Chad will require a complete overhaul of the curriculum in Africa to train millions of hydrologists, engineers, climate scientists, social scientists and the intellectual cadres to meet the challenges of the drying up of Lake Chad. The UNESCO plan smacked of a minimalist intervention to ensure that select schools were further integrated into the IRD intellectual networks that hid behind environmentalism to plan to do nothing about the drying up of Lake Chad.

The intellectual position of UNESCO on Integrated Water Resource Management (IWRM) had been embraced by the European Union who carried out studies on the Lake Chad Basin Ecosystem... While the information collection and control mission is ongoing the European Union has unleashed hundreds of non-governmental agencies in the Lake Chad region to further the imperial domination of the region.

Our approach to the water transfer schemes in Africa emanates from the need for a complete transformation plan that does not continue to forbear the disappearance of African lives as epitomized by the increasing extinction of the Kouri Cattle in the Lake region.

It is based on the Pan African consciousness that is founded on principles of ubuntu and fractals central to African ways of thinking and solving challenges that affects society. From these principles actions to save Lake Chad and the planning to rejuvenate Africa would be conceived as a necessary Pan African effort geared towards solving African problems. This form of thinking is central to the emancipatory ideas that have informed Pan African thinkers and theoreticians from within the academy through music to the arts from Kwame Nkrumah, Hugh Masekela, to Bob Marley among others and embraces a democratic approach to the utilization of the resources of Africa for African peoples. The emancipatory Pan African approach is core to the self-determination framework that challenges Africans to undertake endogenous paths while learning from the circumstance on the global economic and political space in order to avoid hijacking of indigenous agenda and ongoing domination, exploitation, and marginalization by the West.

In this approach to rejuvenating the continent, peace and security is a necessary currency for the objectives of the Pan African project to be realized.

Insecurity hampers planning for rejuvenation

The experiences of generalized insecurity in the Lake Chad basin expose the futility of maintaining the colonial borders that were imposed at Berlin. These borders divide peoples and communities with external forces mobilizing military and political capabilities to retain these divisions, thanks to the partition of Africa. Komadougou Yobé River, river of western

Africa and a tributary of Lake Chad formed by the union of the Hadejia, Jama'are and Komadugu Gana rivers represent a clear case of how colonial borders divided peoples. Presently in the insecurity generated by violent extremists, hundreds of thousands of Africans have been displaced and now live in IDP camps on the Niger side of the river. There are now more than 65 international NGOs working in this region of Diffa. The only elements that enjoy freedom of movement across this river are those such as the runners, scouts and traders allied to the movement called Boko Haram.

Water bodies in the Lake Chad Basin now serve as the reserve base for the operations of external forces and for manipulated youths. It was more than thirty years ago in the context of another manipulated uprising where Yusufu Bala Usman wrote "The Manipulation of Religion" (Usman 1987). This manipulation that started out as a regional affair in northeastern Nigeria has now been internationalized with external forces hyping the 'threat' of Boko Haram to introduce foreign military elements in the Lake Chad Basin. This France has done with its (France plus five) initiative to carry out counter terror operations in the Sahel. The G5 Sahel bloc - Mali, Mauritania, Burkina Faso, Niger and Chad – is being promoted by France to replace and supersede the Multinational Joint Task Force (MNJTF). French diplomats and military personnel have boasted that their goal is to bring Nigeria and the MNJTF under French control.

The ability of the Nigerian society to navigate the manipulations and intrigues of France and external military forces is hampered by the absence of a clear Pan African outlook at the center of Nigerian cultural and intellectual life. Nigerian society reflects all of the scourges of present day capitalism and the low regard for human life. The rush for profit has given rise to the crudest forms of primitive accumulation. Instead of the outlook that had been promoted by Pan African stalwarts such as Herbert Macaulay, Funmilayo Ransome-Kuti, Wole Soyinka, Tajudeen Abdul Raheem, Dr Nnamdi Azikiwe, Fela Ransome Kuti, Obafemi Awolowo, Adebayo Olukushi, Adebayo Adedeji, Eskor Toyo and countless others, the political class promote the politicization of region, religion and ethnicity in order to divide the working peoples. The Nigerian working peoples constitute the numerical force that can shake the foundations of western manipulation in Africa.

Tajudeen Abdui-Raheem and Adebayo O. Olukoshi had written about the Left in Nigerian politics and in a recent book on Marxism in Nigeria it was argued that mobilization of cults and militias constituted a preemptive move to forestall a more robust social movement in Nigeria (Mayer 2016). In the eighties, Chief M.K.O. Abiola had supported one of the principal platforms of the Global Pan African movement, the demand for reparative justice. This demand for reparations for enslavement and colonialism had been taken to the Organization of African Unity (OAU) and by the turn of the century, the World Conference against Racism had outlined a clear agenda for the new directions to fight racism globally. Similarly, the struggles for environmental repair in Nigeria have been met with the deadly response of the state, as witnessed by the murder of Ken Saro Wiwa and others. It is in the area of control over the destructive practices of the oil companies where scholars have pointed to the centrality of misgovernance in Nigeria (Akinola 2017). Western foundations and think tanks have worked strenuously to erase the discussions about slavery and reparative justice from the Nigerian society to the point where misguided elements called Boko Haram could pronounce that they were going to sell kidnapped girls into slavery.

There has been an escalation of violent clashes between nomadic herders from northern Nigeria and sedentary agrarian communities in the central and southern zones. In January 2018, over 70 persons were killed in one day in Benue state highlighting the ways in which pastoralists who have been negatively affected by global warming have been moving southwards. Although there are internal and external forces who have trumpeted the politicization of regionalism, ethnicity and religion in the context of the changed environmental conditions, the establishment of the North Eastern Development Commission by the Federal government of Nigeria is one gesticulation towards an understanding that far more than a militarized response is needed to promote social peace. The Federal government is quite clear of the urgency of a robust canal system. After spending more than \$500 million to promote irrigation by tapping from the waters of Lake Chad, this project has been still born because of the drying up of the Lake.³² The International Crisis Group has observed that,

Over the past five years, thousands have been killed; precise tallies are unavailable, but a survey of open source reports suggests fatalities may have reached an annual average of more than 2,000 from 2011 to 2016, for some years exceeding the toll from the Boko Haram insurgency. Tens of thousands have been forcibly displaced, with properties, crops and livestock worth billions of naira destroyed, at great cost to local and state economies.³³

The phenomenon of Boko Haram in Nigeria has evoked passions around Africa, especially with its kidnapping of women and girls. While the international media has sought to stress the military responses to the expressions of violence coming from the youth, there are elements within the Nigerian State who recognize that the economic and environmental conditions in the Lake Chad basin provide the social conditions for impoverishment to make the youths susceptible to mobilization by anti-social forces. The increasing shrinkage of the Lake and the varying levels of the water even in periods of favourable rainfall have meant that for the many years and/or most parts of the year herders and youths rendered jobless move south to find means of livelihood.

It is within these contexts of insecurity and absence of basic amenities such as running water, public health services, education or access to leisure that there is a need to escape the propaganda of terror and terrorism. This task of ensuring peace and stability in Northern Nigeria, the Central African Republic, the Congo and now southwest Cameroon is one of the multi-faceted projects that should accelerate the realization of the goal of silencing the guns and undertaking reconstruction in Africa.

In other words, peace is central to discussions about reconstruction and transformation in Africa. With this understanding the progressive forces will be able to draw the unambiguous connection of the water transfer scheme and the replenishing of Lake Chad to peace and stability in Africa—here, we're referring to the sort of peace and safety founded on the physical, spiritual and material re-humanization of Africans, as outlined by African feminists like Wangari Mathai, Patricia Daley (2007) and Amina Mama rather than the just-stable-enough-to-exploit stability of neoliberal extractive capitalism (Amin 2003).

This relationship between peace and the water transfer project is such that this project could help redirect youthful energies away from engagement with elements that disrupt

transformational attempts in Africa. At the same time, feasibility studies in the two basins and the consequent water transfer can hardly be done outside the context of peace in the region.

The relationship between the environmental sustainability of the Lake Chad Basin is even clearer with the linkage of the MNJTF to the Lake Chad Basin Commission to promote sustainable water levels and peace and stability in the region. By following the security trends in the two basins a better appreciation will be had that the economic dimension to security is the most important of all security questions in these areas. It will then follow that by audacious efforts to combat the economic dimension through water transfer considerable measure of the root causes of insecurity in the identified areas could be addressed.

The African Union launched Agenda 2063 to transform the African continent. In the planning to obtain the Africa we want, transboundary water resources are central to promoting hydroelectricity and navigation (AUC, 2013). Within this continental planning there has to be political clarity about the enormous significance of water transfer from the Congo and how by the integration of the Lake Chad Basin and the Congo Basin the whole of the continent stands a great chance at integration and promoting peace, this is particularly important in the context of an illicit global economy that thrives on militarism in Africa.

Within the African Union there are contending forces seeking to define a new relationship to global capital. On one side are those leaders who have subcontracted their states to global capital and on the other side are the vast majority who want the African Union to represent the peoples of Africa. These two positions are related to those who want restorative and transformative justice as a component of the discussion of reparations and those who want to deepen engagement with the external financiers based on extractive industries (see recent volume on African perspectives of justice, edited by Odumaro Mubangizi). Africans who are advocates for environmental and social justice are very active on the international front pushing for global standards and agreements to reverse global warming. These activists understand that the challenges of global warming have to ensure alliances with likeminded groups and organizations.

Nigerian women continue to claim spaces for dignity. In the official documents on water there is the repetition of the often-romanticized mantra that 'women play key role for water resource management and that gender mainstreaming is essential.' Women of all classes are demanding their basic rights' but it is the women from the producing classes who bear the brunt of capitalist exploitation who are at the forefront of demanding structural changes to the way life is organized. Boko Haram kidnap women but others promote religious dogma that seeks to remove women from public spaces and remove their voices in the struggles for dignity. Yet, it is from this society with close to 200 million souls where the contestation about the future of capitalism in Africa is fiercest. From these struggles the peoples of Africa are reaffirming that the democratic approach to the management of these resources is central to the survival of exploited groups, especially oppressed women, the existence of communities and ethnicities who derive their very being from the availability of the water bodies (Shiva, 1988).

An unambiguous Pan African democratic approach to water management in the Lake Chad and Congo basins would not only save Lake Chad but also provide the springboard for the building of an extensive canal system all across Africa. This author has elsewhere listed the 8 major canals that should be built for this century. The 8 major water transfer schemes are:

The Zambezi to Limpopo water transfer scheme and canal incorporating the Matabeleland Zambezi Water Project (MZWP)

The Kalahari Canal system harnessing the resources of the Okavango Delta

The Pan African Canal system linking the Congo River to the Aquifers of the region and ultimately replenishing Lake Chad

Northwestern Sahara Aquifer system (Northern Sahara Aquifer system, Bas Saharan Basin resources) to link to Lake Chad through the Sahara to the Manmade river

The Chad - Nile Canal system harnessing the Nubian Sandstone Aquifer System

The Lake Chad - Niger Canal systems

The Trans Sahara Canal system to link the Senegalo-Mauritanian basin with Northwestern Sahara Aquifer- Lake Chad network

The East African Lotikipi Basin Aquifer systems linking the regions of Northern Kenya to Shebelli - Juba basin.

Within the current task of rejuvenating Africa, the primary focus is on the Pan African canal to replenish Lake Chad and transform Africa from the central region of the continent.

The Congo-Chad water transfer: from the imagined to the reality

Hermann Sörgel

In the book, *“Engineers’ Dream: Great Projects that could come true”* Willy Ley had examined the prospects for unifying the waters of the Congo and the Lake Chad. It is from Ley’s work that we have obtained clear account of the origins, history and opportunities to be explored from massive engineering projects and the rationale that had underlain these projects.

The Congo-Chad canal system, recorded by Ley (1954), was proposed in the 1920s by a German architect and engineer Herman Sörgel. This proposal for water transfer sought to connect the Congo through Ubangi to Lake Chad with a continuing canal from Lake Chad to the Mediterranean Sea. The proposal was part of a grandiose plan and Sörgel’s book called *Atlantropa* (Sörgel 1932).

The Congo-Chad-Mediterranean water transfer scheme, and German plans for involvement in Africa were placed on hold during World War II. By this time the Lake Chad was recovering from its being a mere swamp in the 1908 towards becoming a Lake with an area of about 25,000km² in 1963 (LCBC, 2016). What has yet to be known however is the human and environmental catastrophe that the peoples of Africa who lived in the Lake Chad Basin suffered during the period of the shrunk Lake. After the WWII, both Britain and France viewed Africa as a treasure house to assist with the recovery of Europe. Britain joined the dollar currency regime and advanced plans such as the Groundnut Scheme to ensure that African agriculture served Europe.³⁴

Sörgel's overall plan promised global supremacy to Europe with suggested leadership of Germany and Italy. The water transfer project however lost its publicity by the end of the first two decades after WWII together with what some describe as the 'bizarre' plan to make a supercontinent out of Europe and Africa.³⁵

Transaqua

In the late 1970s, the Italian engineer Marcello Vichi of Bonifica, the engineering arm of the then IRI Italstat Group, rejuvenated discussions about River Congo – Lake Chad water transfer when he proposed a 2,400km canal to refill the Lake (Ifabiyi, 2013³⁶). This idea was presented as a detailed proposal to the Lake Chad Basin Commission as “Transaqua: A North-South Idea for South-South Cooperation” (Bonifica, 1991).

In this proposal, Vichi has examined the massive transformational benefits that could be derived by undertaking this project. It is this proposal that has furnished additional understanding that democratic management of the water resources of the Congo will provide benefits not only to the receiving Lake but also for the Congo Basin where the water is to be sourced.

The Transaqua idea is to dam 4 catchments of the Congo namely, the Ubangi, the Aruwimini, the Lindi and the Lowa tributaries in efforts to redirect about 100 billion m³/year of water to Lake Chad. According to the proposal, this will mean obtaining 90% of the water from the Congo and the remaining 10% from the Central African Republic. This volume of water from the Congo is estimated to be about a 5th of the nearly 1.9 trillion m³ that enters the Atlantic annually.

Transaqua is planned to establish 1,600km waterway in the territory of the Democratic Republic of Congo to serve navigation purposes. It also proposes the damming of the tributaries of the Congo as a mean to regulate flooding of the north eastern part of its catchment area. Further up into the Central African Republic, Bonifica suggests a continuing waterway of about 800km in length to complete the canal system that would open up the interior of Africa to trade, commerce, access to ports, and hydroelectricity as well as roads and rail networks that will contribute to closing the infrastructural gap in the heart of Africa.

Irrigated areas were also envisaged along the canal path to combine with the ultimate refilling of Lake Chad to provide a lifeline against the advancing Sahara Desert. According to the proponents of this scheme “what is concerned is in fact the promotion and the support of a “continental” project which could be decisive element in the fight against the desertification of a large part of the Sahel” (Bonifica, 1991:28). Another profound recognition of Transaqua is the need for international economic and productive integration of the continent to provide the impetus for “true economic autonomy and political independence” (ibid: 19).

The NEPA Proposal

At about the same time as the Transaqua proposal was presented to the LCBC there was a second proposal from the Nigeria National Electric Power Authority (NEPA) regarding water transfer to save Lake Chad.

The NEPA led by Jerome C. Umolu proposed to pump “against ahead of 250m over a distance of 100km from the Oubangi River” upstream of Bangui and recharge into River Fafa for a release into the Chari via gravity and consequently to Lake Chad. This option was however to rely mostly on cheap power supply from the Democratic Republic of Congo (McDonald, 1991).

NEPA offered a second option of the water transfer by a link to the Congo River in a 170km distance and for distribution purposes a transfer via Benue and Niger Rivers through a canal system “from the Chari to Logone and into the Mayo Kebbi and Lake Lere”. It was estimated that an average discharge of 300-500m³/s (10-15km³/yr) could restore Lake Chad to its size (25,000km²) before the drought of 1974 and 1984 (MacDonald, 1991; LCBC, 2016).

There was a reconnaissance conducted by Mott MacDonald and anchored on NEPA’s Ubangi-Fafa water transfer proposal. The report of this study critiqued the Transaqua proposal on grounds of technical feasibility citing topographic hurdles to be surmounted and the possible shortage of water in the catchment areas in the Congo that would be employed in the Transaqua project.

The Mott MacDonald reconnaissance study therefore concluded that “[t]he NEPA scheme is more modest in its ambitions and has potential for staged development, it is therefore the more likely of the two to be suitable for further investigation” (MacDonald, 1991).

CIMA Feasibility Study

Following this conclusion, the question of Ubangi-Chad water transfer became only second on the list of 36 projects that were identified in the Master Plan of LCBC to promote transformation in the Lake Chad Basin (LCBC 1992; Ifabiyi, 2013). It is in the Master Plan that the feasibility study for Interbasin water transfer from Ubangi had been planned to be completed within 18 months. After two decades of maneuvering through various oppositions, a breakthrough came with internal financing from members of the Basin for the feasibility study. It was this Ubangi proposal which formed the basis for the feasibility study of CIMA International Group. The funds for the CIMA study were provided to the LCBC by the Parliament of Nigeria.

In this study which commenced in 2009, CIMA+ examined options to transfer water from Ubangi to Lake Chad and selected two options for this transfer for detailed analysis. The two options included:

- 1) Pumping through a Dam on Ubangi River
- 2) Transfer by gravity via the Kotto River.³⁷

The 18 months study completed in 2011 concluded that it was technically and economically feasible to transfer water from the Ubangi sub-basin of the River Congo to the Lake Chad via joint projects of Dams at Palambo and Bria which would be accompanied with training/dredging of sections of Chari and Logone rivers to facilitate inflows to increase the level of Lake Chad (CIMA, 2012a).

The Ubangi transfer through the combined project was studied to have the capacity to increase the surface area of Lake Chad by 5,500km² through the delivery of 300m³ of water per second to the Lake (CIMA, 2012b).

There have, however, been questions over the sustainability of the Ubangi proposal in the ultimate goal of replenishing the Lake Chad especially during periods of shortfall in rainfall as the Ubangi system depends mostly on the rains and runoffs.

PowerChina

Following the CIMA report, it has been necessary to conduct a further study about the water transfer to save Lake Chad. This further research came under the signing of a Memorandum of Understanding with PowerChina, the Chinese company behind the Yantze Three Gorges Dam.

This Agreement signed in December 2016 established the basis for undertaken basic research on the Lake Chad Basin Water Transfer and related future projects.

It is the MoU that informs us that PowerChina is committed in the technical and financing areas of the additional study while the LCBC will facilitate acquisition of relevant data and reports as well as technical details of the project. The LCBC will also negotiate and secure necessary approvals for the conduct of the study (LCBC and PowerChina, 2016).

International Conference on Saving Lake Chad- February 2018

At the High-level meeting of the Heads of State of the LCBC in 2018, it was agreed that the Transaqua proposal will be supported by the LCBC. It is this accepted proposal and its consequent realization from the African point of view that has seen the characterization of the water transfer as the Pan African Canal. The agreed water transfer option will include an **Inter–African Polyfunctional Trading Area (IPTA)** (equipped for the containers exchange in order to allow connection of Mombasa and Lagos to the oceanic ports). The Mombasa to Lagos highway would be part of the New Silk Road of the ‘One belt One Road’ plan that had been outlined by the Chinese government.

There would also be regulation of the water flow regime on the affected rivers in order to make them navigable. This Canal system would intersect with the construction of a major inland port in the country now called Central African Republic. There would be a road system beside the canal.

At the conference it was agreed that Italy, Power China and the LCBC would finance the Environmental and Engineering study. The plan was that this project would be a US \$70 billion endeavor over 30 years.

At the end of the international Conference on Lake Chad in February there was a final roadmap that accepted seven principal recommendations that:

- The African Union should endorse the Inter-Basin Water Transfer (IBWT) initiative as a Pan-African project to restore the Lake toward peace and security in the Lake Chad region and promote navigation, industrial and economic development in the whole Congo basin.
- The International Technical and Financial Partners and Donors to support this Lake Chad Basin initiative through the financing of LCBC Development programmes aimed at addressing the problems caused by the shrinking of the Lake.

- The African Development Bank to facilitate the creation of the Lake Chad Fund of US \$50 billion, to be sourced from African States and donations by Africa's Development Partners to fund the Lake Chad IBWT and infrastructure projects.
- Strengthen and build capacity of LCBC to handle the complex environmental and engineering challenges facing the project.
- Strengthen security apparatus along the shores of the Lake to ensure commencement of studies and developmental activities.
- Develop database of the genetic resources and biodiversity within the Lake Chad Basin.
- Undertake studies to establish the hydraulic conductivity of the Nubian sandstone aquifer with the basin.

Pan African geopolitics, peace and the water transfer project

One perpetual question about this Pan African project has been about the sources of finance. However, as the different proposals are debated, it is clearer that stemming capital flight and illicit flows will be one element of the restructured state apparatus that could bring this rejuvenation into being. Since the demise of Mobutism and the popular struggles for peace and reconstruction in Africa, international capital has developed a new model of resource extraction where the militarization of the state and society went hand in glove with sending scarce resources outside the continent. Nigeria is a society where this model of accumulation and integration into the illicit global economy is most developed (state-citizen relations in Chad, too, are structured through global capitalist petro-extraction). Private military contractors and private non-governmental organizations then compete for the political space and are given small handouts via foundations and religious organizations. Universities and organic intellectuals of the people are in the process marginalized to the point where in terms of the intellectual work produced on replenishing Lake Chad one can count the scientific studies on one hand.

Other societies of the Lake Chad Basin region are also integrated into this illicit global economy. Characteristically, all of the states of the Commission have vast resources and the extraction of petroleum resources have been organized to ensure that the minimum of the proceeds are returned to society. The social classes in strategic control over state resources have been willing and able to import the technology of surveillance and military transport but have failed to introduce the minimum understanding of the possibilities offered by the information revolution. The potential of using technology to leap from stages of development that emanated from the accumulation phases of Western Europe are being offered by the explosion of the scientific advances of this period (approximately 80 percent of the people on the continent have access to mobile telephones, for example). There are tremendous possibilities offered by the development of new scientific techniques that builds on the African ideation systems and worldviews. Those who are researching on African knowledge systems are seeking to re-discover the value of the self-organizing principles of African villages, to support human self-worth, education and knowledge accumulation potential of African peoples as a means to explore, identify and nurture their own human knowledge based unique competitive factor advantages in the 21st century.

The Lake Chad Basin is one of the areas in Africa that is noted for recurring conflicts and where the economics of warfare is linked to the accumulation models of the NATO countries. Since independence in 1960 there have been eleven different wars in the Congo and these wars have postponed the reconstruction of Africa. The efforts of the African Union to bring together a continental body to bring peace have been stymied by counter terrorism projects of the NATO countries. Elsewhere this author has outlined in great detail the repercussions of the NATO destruction of Libya (Campbell 2013). It should not go unrecorded that after Libya became a member of the LCBC, the Libyan leader made it plain that the reserves of Libya would be deployed to finance the water transfer scheme if the scheme proved to be environmentally viable.

In all parts of West Africa and Central Africa peace has been postponed as a result of the aftermath of the spread of weapons and jihadists groups who are integrated in the global armaments culture. Counter terror has grown to be a business with the government of France refining this model in its campaigns in the Sahel region and in Central Africa. The cynicism of France in the manipulation of peace is nowhere more starkly than in the Central African Republic where since 2013 France has used its position on the Security Council of the United Nations to conceal its mischief (France has also backed military interventions, actions and assassinations in Algeria, the DRC, Burkina Faso, Chad, Cote d'Ivoire, Mali and Niger). Since the removal of the stable government in Libya in 2011, every member state of the Lake Chad Basin Commission has been plagued by armed rebellion of one sort or another.

This consciousness has facilitated understanding about the complex interconnections among peace, environmental repairs, livelihoods and clean spaces. It is this understanding that emphasizes that even though PowerChina has provided new momentum, there must be vigilance to ensure that the industrial and economic practices of China that has destroyed the air and water are not transferred to Africa (as we've seen recently in Chad's Doba Basin, for example).

For the moment, the two forces in the African Union are delicately balanced with the activists of ECOSOC linking environmental repair to global reparations. It is on the question of environmental repair and peace where African activists have joined forces with social movements in the Global South to forge a common agenda to reverse global warming. One such platform was the participation of social groups from Africa in the articulation of the People's Agreement, of the World People's Conference on Climate Change and the Rights of Mother Earth. The People's Agreement held that,

It is imperative that we forge a new system that restores harmony with nature and among human beings. And in order for there to be balance with nature, there must first be equity among human beings. We propose to the peoples of the world the recovery, revalorization, and strengthening of the knowledge, wisdom, and ancestral practices of Indigenous Peoples, which are affirmed in the thought and practices of "Living Well," recognizing Mother Earth as a living being with which we have an indivisible, interdependent, complementary and spiritual relationship.

It was the admission of the People's Agreement that "to face climate change, we must recognize Mother Earth as the source of life and forge a new system" based on the following principles:

- harmony and balance among all and with all things;
- complementarity, solidarity, and equality;
- collective well-being and the satisfaction of the basic necessities of all;
- people in harmony with nature;
- recognition of human beings for what they are, not what they own;
- elimination of all forms of colonialism, imperialism and interventionism;
- peace among the peoples and with Mother Earth;

The model we support is not a model of limitless and destructive over-development. All countries need to produce the goods and services necessary to satisfy the fundamental needs of their populations, but by no means can they continue to follow the path of development that has led the richest countries to have an ecological footprint five times bigger than what the planet is able to support.”

The publication of the Universal Declaration of the Rights of Mother Earth held most of the principles in Africa that have been articulated under the philosophy of Ubuntu.

It is in the Universal Declaration on the Rights of Mother Earth, in which the following rights of the Earth have been outlined to promote the continued existence and functioning of this planet:

- The right to live and to exist;
- The right to be respected;
- The right to regenerate its bio-capacity and to continue its vital cycles and processes free of human alteration;
- The right to maintain their identity and integrity as differentiated beings, self-regulated and interrelated;
- The right to water as the source of life;
- The right to clean air;
- The right to comprehensive health;
- The right to be free of contamination and pollution, free of toxic and radioactive waste;
- The right to be free of alterations or modifications of its genetic structure in a manner that threatens its integrity or vital and healthy functioning;
- The right to prompt and full restoration for violations to the rights acknowledged in this Declaration caused by human activities.

The centrality of peace in the attempt to secure these rights cannot be overemphasized. Peace as a process, based on an alternative paradigm, is a point of departure for building a new qualitative relationship between Africa and the world by the validation of African lives in the global economy (Daley 2007). The social explosion required for moving forward after the sacrifice of the millions who died in the wars demand new concepts (Daley 2007, 2014). The violence and destructive forces of wars do not only pose much hurdles in attempts at rejuvenation but could also reverse gains that have been recorded in efforts towards transformation. It is in this sense that peace and sustainable reconstruction are linked to concepts of institutional and structural transformation, reproductive and gender rights and the ideas of emancipatory politics.

Robin D. G Kelley who has written extensively on the black radical imagination noted that,

“Without new visions, we don’t know what to build, only what to knock down. We not only end up confused, rudderless, and cynical, but we forget that making a revolution is not a series of clever maneuvers and tactics, but a process that can and must transform us”

Pan Africanists are clear that the vision of a free and prosperous Africa cannot be achieved without fundamental transformations: transformation of material conditions, transformation of consciousness, transformation of political and social relations and the transformation of gender relations (see chapters in the recent volume on Thomas Sankara, edited by A. Murrey 2018). Progressive Pan African women have argued that there can be no rejuvenation of Africa without the unshackling of women. In the words of Bonita Harris,

The struggle for our economic independence, for the right to be paid for work, must take precedence overall other struggles. This is not merely an expression of choice (which it is too; freedom of choice, ranking high on any list of essential human rights), but also an expression of good sense, since the free-Africa goal of Pan Africanists will never be won unless the unshackling of women, the producers and reproducers of labour power becomes an absolute priority of all organisers, freedom fighters and would-be liberation parties.

How can women be expected to play an effective and genuine role in the wider movements needing their talents and energies when they are hemmed in by life itself? When they are constrained by multiple social oppressions which are not the active concern of pan movements? Imagine a Pan Africanism vibrant with social truth and peopled with free women.” (Harris 1996)

This imagination of a Pan Africanism vibrant with social truth and peopled with free women is also at the foundation of social peace. In so far as these ideas take hold of and there is a break with masculinist thinking, there is room for a new culture of peace in Africa (see McFadden 2018; Mayanja 2018). It is in this sense that the struggle for peace is tied to a new mode of politics away from militarism and remains part of a search for affirming the essential humanity of the Africans and the African capacity to think.

In the attempts to realize the vision of peaceful Africa, the present political leadership has placed emphasis on individual governmental efforts in what is called the programme for infrastructural development in Africa (PIDA) and NEPAD. Under PIDA water projects like the navigational line from Lake Victoria to the Mediterranean has been born on the initiative and interest of a particular president. In this paper we want to distinguish the Lake Chad water transfer to say that it does not remain the effort and development of one nation or one particular regime. This is not to mean that the peoples of the basin countries (country) should relax in pushing for the water transfer. In the IDP camp of N'guigmi, the demand of the people was for the replenishing of the lake so that they can return to farm fish, trade and provide for livestock. What is even more necessary, in our view, is that respective progressive social movements across Africa come together to take bold initiatives for reforestation, water harvesting and tree planting even while new studies are being carried out about the water transfer and the rejuvenation of the heart of Africa.

Beyond verbal agreements and promises, it is herein contended that formal agreements should be established to outlive regimes and current governments. The documentation of various agreements and buy-ins is crucial for sustained discussion and undertaking of the

project to integrate the Congo Basin and the Lake Chad Basin. In other words, when agreements are institutionalized it could withstand the change of government in any particular country that is affected or could affect the water transfer scheme. This has been the experience of the Fort Lamy Agreement of 1964.

By the end of our first research trip, it had become more obvious that the question of a Congo Chad water transfer is not about money. What is required is tenacity, political will and determination against any odds of opposition towards a water transfer scheme. At the very least, the troubled minds wondering about how a massive project of the kind could be financed could take comfort in the fact that there are billions of dollars that are hidden in overseas banks. A social movement that is willing and able to promote the Return of Stolen Assets will be able to change the orientation of the LCBC and the insufferable donor meetings. The popular demand for democracy also involves the demand for clean water and innovative harness of water in Africa through canals and water storage would be important in meeting this democratic need of Africa and the urgency of regenerating Africa and repairing the environment.

Conclusion

At the dawn of the African Union, Hugh Masakela sang the song, Everything Must Change. This call for change echoed Bob Marley's rallying call for unification. It was sixty years ago in Ghana when Patrice Lumumba was introduced to the Pan African Movement and to the ideals of the unification of Africa. When Lumumba returned to the Congo he sought to build a social movement to harness the resources to uplift the conditions of life of the people. For this, Patrice Lumumba was assassinated and the DRC was turned into a base for the reversal of the decolonization project. The assassination of Lumumba was followed by the assassination of numerous freedom fighters and the overthrow of Kwame Nkrumah in Ghana. There was a strenuous effort by external forces to assassinate the ideals of Pan African unity and cooperation. The Pan African imagination of freedom survived the storms of external military pressures and the goals of unification were rekindled after the defeat of the odious system of Apartheid.

The ideals of the first leaders of Africa were widely accepted to the point where the signers of the Fort Lamy agreement to establish the Lake Chad Basin Commission understood that cooperation was necessary beyond the geographical boundaries. In the 54 years since the establishment of the LCBC the global conditions of exploitation have intensified. Since the global financial crisis, there are signs every day of the fragility of the international system with intensified competition for African resources. In this competition, the former colonial states are now confronted with the energetic drive of the BRICS governments to strengthen relations with Africa. The signing of the Memorandum of Understanding between the LCBC and Power China represented a major intervention in the back and forth of the financial feasibility of the major water transfer system in Africa.

Although the technical studies and audits have used a conceptual lens of water and life as commodities, the realities of the rapid and sharp changes in the environment challenge policy makers to interrogate the rhetoric of sustainability and development that have ensured intensified exploitation of Africa. This exploitation threw up new challenges at a moment when the dangers of global warming threatened the very existence of the lives of millions of

Africans. Predictions that by the end of the century the temperatures will rise to over 6 degrees Celsius have brought a certain amount of urgency in the planning for social and economic transformation. Those societies and governments with control over the international political agenda sought to define the pace and rate by which Africa should respond to the dangerous possibilities of incineration. Whether it is the Kuri cattle species of the Lake Chad basin or the pastoralists of the Central African region, there is not one day where the negative impacts of global warming are not felt in this part of Africa.

African advocates for rejuvenation and peace have provided one way of grasping the context for reconstruction urgency needed on the continent. In the work of both Malidoma Some and Wangari Maathai there is an effort to bring out a Pan Africanism that deals with the fundamentals of life. When one deals with the fundamentals of life and reconstruction in Africa, one must confront the question of spiritual values associated with nature. Like the commoditization of nature, spirituality has been debased and appears in the form of competitive religions where youth can be mobilized on the basis of violence and misogyny. In all major religions and forms of spiritual reflection, water plays a central role. Whether it is the religion of the African ancestors or the newer religions such as Christianity or Islam, water is presented in real or symbolic forms. Water as a symbol of life as well as a means of cleansing or purification is of particular importance in the traditions of Africans. This presentation sought to link with the spirituality of Ubuntu and the universal ethics of sharing and cooperation to provide the inspiration for cooperation to unleash canal systems to rejuvenate the Lake and to speed the processes of integration and reconstruction through joint harness of the waters of Africa.

Historical evidence was unearthed to remind the reader that major scientific and technical feats had been possible in another era of African independence. Such independence is now needed in order to mobilize the political and intellectual resources to save Lake Chad. In this paper there was the recounting of the experiences of the canal systems of pre-colonial African societies. Reference was also made to the great possibilities of structural transformation based on democratic participation. Every major innovator predicts that the 21st century will be the moment of profound change. Steve Jobs, one of the founders of the Apple Corporation stated that the biggest innovations of the 21st century will be at the intersection of biology and technology. He proclaimed that a new era is beginning. African youths have embraced this era and are yearning for social investment in their future so that they can plan to go to engineering schools instead of being lured in the modern trafficking of humans to provide cheap labour for Europe. The imagination of a free and prosperous Africa that had been depicted in the mythical state of Wakanda in the film, the Black Panther has a corresponding base in the aspirations of the African Union.

There is general impatience among the youth. But far more important than their impatience are the contradictions of the massive wealth of Africa being siphoned off by political leaders who then criminalize those who seek democratic participation and expression. The uprisings of 2011 represented one direction of the potential political earthquake in Africa. Those who are nervous about African self-determination used this period to remove the government of Libya and assassinate the leader who wanted to use the reserves to jump-start the common African currency. The evidence of the nervousness of imperial forces with respect to plans to harness African resources is manifest in the fact that the factory that was producing the raw materials for the Great Man Made River was bombed during NATO's catastrophic failure in Libya.

This paper supported the idea of building a robust canal system to harness the waters of Africa. Lake Chad is drying in a continent where 25 percent of the waters of the Congo drain to the Atlantic Ocean. The absence of democratic participation and expression in the Congo continues to slow down real investigation of moving forward. Meanwhile, in the midst of the insecurity for the broad working poor, international mining companies and energy formations build political alliances to block political transformation. Terror and counter terror are then unleashed in a military form to disguise the business model of the illicit global economy. However, the seeds of independence that were planted in another generation are still alive and one of the tasks of the progressive intellectual will be to build the networks of scientists and policy makers to move the engineers dream of water transfer and canal systems across Africa to be a Pan African reality.

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Endnotes

¹ For a full critique of the Cartesian world view on domination see David Harvey, *Justice, Nature and the Geography of Difference*, Blackwell, Oxford 1999. See especially Chapter 6, "The Domination of Nature and its Discontents."

² The countries that are formally members of the Lake Chad Basin Commission are Cameroon, Central African Republic (CAR), Chad, Libya, Niger and Nigeria.

³ Countries wholly or partially in the Congo basin region are: Angola, Burundi, Cameroon, Central African Republic, Democratic Republic of the Congo, Republic of the Congo, Rwanda, South Sudan, Tanzania and Zambia

⁴ I. O. Agoro, "The Establishment of the Chad Basin Commission," *The International and Comparative Law Quarterly*, Vol. 15, No. 2 (Apr., 1966), pp.542-550

⁵ The Regional Economic Communities (REC's) of the African Union contain states that are in overlapping regional bodies. For example, both Angola and the Democratic Republic of the Congo are members of the Southern Africa Development Community while they are also listed as members of the Economic Community of Central African States. The ten members of the Economic Community of Central African States are Angola, Burundi, Cameroon, the Central African Republic, Chad, Congo Brazzaville, the Democratic Republic of the Congo, Equatorial Guinea, Gabon and Sao Tome and Principe.

⁶ See for instance Magrin (2016). *The disappearance of Lake Chad*.

⁷ Jacques Lemoalle and Geraud Magrin, *Development of Lake Chad: Current Situation and Possible Outcome*, IRD Editions, Expert Group Review Collection, Marseille 2014

⁸ Description of the Congo River in *Encyclopedia Britannica*, <https://www.britannica.com/place/Congo-River>

⁹ *ibid*

¹⁰ <http://www.responsiblebusiness.eu/display/rebwp2/Living+economies+%28Vandana+Shiva%29>

¹¹ *ibid*

¹² . Adam Hochschild, *King Leopold's Ghost: A Story of Greed, Terrorism and Heroism in Colonial Africa*, Mariner Books, New York 1998

¹³ From speech of Auxillia Ponga during the launch seminar of the ***Economic Report on Africa 2016: Greening Africa's Industrialization*** in Lusaka Zambia, <https://www.uneca.org/stories/why-green-industrialization-makes-sense-africa>

¹⁴ *Economic Report on Africa 2016: Greening Africa's Industrialization*, <https://www.uneca.org/stories/why-green-industrialization-makes-sense-africa>

¹⁵ David Harvey, ***Justice, nature, and the geography of difference***. Cambridge: Blackwell, 1996.

¹⁶ Justus Wessler and Joachim von Braun, *Measuring the bio economy: Economics and policies*, Annual Review of Resource Economics

¹⁷ European Commission, Bioeconomy Panel, <https://ec.europa.eu/research/bioeconomy/index.cfm?pg=policy>

¹⁸ Calestous Juma, "If we develop Africa's bioeconomy it will be as transformative for us as digital has been," Quartz, December 2016, <https://qz.com/860598/africas-bioeconomy-will-be-as-transformative-as-the-mobile-phone-and-digital-technology/>

¹⁹ The sources of data for this table includes: The Population Reference Bureau; Economic and Social Affairs (ESA) Division of UN Secretariat; Cameroun Data Portal; Sustainable Energy for All; and World Bank, Sustainable Energy for All (SE4ALL) database from SE4ALL Global Tracking Framework led jointly by the World Bank, International Energy Agency, and the Energy Sector Management Assistance Program.

²⁰ Francis X. Johnson, "Biofuels, Bioenergy and the Bioeconomy in North and South," Industrial Biotechnology, December 2017, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5743105/>

²¹ *ibid*

²² The Great Man Made River (GMMR) harnessed the aquifers of Libya to channel about 6.18 million cubic meter of water through pipes connected to two of the five primary regions of groundwater in Libya (Asswad, 1995). This project was variously opposed and seen by western scholars as project bound to fail. It is the CIA recently declassified document that even help explain the opposition as stemming from the fact that by this project Libya was going to be considerably self-sufficient not to depend on imports for years. This was to result from the agricultural prospects that these water resources offered the country. This project had been ongoing until the intervention in Libya. The bombing of the pipes that are laid for the GMMR point to the reality that the intervention in Libya had economic imperatives

²³ Karl W. Butzer, *Early Hydraulic Civilization in Egypt: A Study in Cultural Ecology*, University of Chicago Press 1976

²⁴ For elaborate discussion on the engineering of the Panama Canal see Denis Jr (2014).

²⁵ Klement Tockner et al, "A Global View on Future Major Water Engineering Projects," in *Water Resources Development and Management*,

²⁶ Alexander, 1907; Tilho 1910; Ness, 1931 All have various reports of their journeys to the Lake Chad.

²⁷ General Comment No. 15. The right to water. UN Committee on Economic, Social and Cultural Rights, November 2002

²⁸ Money Down the Drain: How Private Control of Water Waste Public Resources, Food and water watch, 2009, <https://www.inthepublicinterest.org/wp-content/uploads/MoneyDownDrain.pdf>. See also *Prud'homme, Alex (2011). The Ripple Effect: The Fate of Fresh Water in the Twenty-First Century (1st ed.)*. New York: Simon & Schuster. p

²⁹ A report of Magrin and Lemoalle in 2015 provides insight into this approach.

³⁰ See the proposal of the African Development Bank to establish PRODEBALT https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Multinational_-_Lake_Chad_Basin_Sustainable_Development_Programme_-_Prodebalt_-_Appraisal_Report.PDF

³¹ https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/MULTINATIONAL_-_Appraisal_report_Programme_to_Rehabilitate_and_Strengthen_the_Resilience_of_Lake_Chad_Basin_Systems_%E2%80%93_OSAN_-_Approved_%E2%80%93_01_2015.pdf

³² Ecology, Identity, Developmentalism and Displacement in Northern Nigeria SHETTIMA, KOLE AHMED. *Journal of Asian and African Studies*; Leiden Vol. 32, (Jan 1, 1997): 66.

³³ Herders against Farmers: Nigeria's Expanding Deadly Conflict, International Crisis Group, September 2017, <https://www.crisisgroup.org/africa/west-africa/nigeria/252-herders-against-farmers-nigerias-expanding-deadly-conflict>

³⁴ Wood, Alan *The Groundnut Affair*. London: Bodley Head. (1950).

³⁵ See Daily Mail article "The bizarre 1920s plan to merge Africa and Europe into a supercontinent by draining the Mediterranean. <http://www.dailymail.co.uk/sciencetech/article-3789415/The-bizarre-1920s-plan-merge-Africa-Europe-supercontinent-DRAINING-Mediterranean-Sea.html>

³⁶ Ifabiyi puts the date of the Transaqua proposal at the late 80s. See table 3 on page 215 of his article titled "Recharging the Lake Chad"

³⁷ These details are available to the public. See CIMA International, *Water Transfer Feasibility Study* http://www.cima.ca/cgi-cs/cs.waframe.content?click=161647&lang=2&singlepagepopup=1#.WliScqhl_IU (accessed 12/5/17)

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