The Environmental Implications of China’s Engagement With Sub-Saharan Africa

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The Environmental Implications of China’s Engagement With Sub-Saharan Africa

by Ruth Gordon

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Summary

Since the turn of the millennium, China has become an increasingly important economic and political power in Sub-Saharan Africa. Although China has unequivocally come in search of natural resources, its mission is undoubtedly deeper, broader, and more considerable, given the establishment of institutional mechanisms such as the Forum on China Africa Cooperation. China has come with new development modalities, but also with a poor environmental record. This has meant increased investment and trade for African nations, as well as serious environmental challenges that must be addressed. China is also determined to become a leader in green technologies, and Africa is one of its testing grounds. This holds the promise of modernization that does not put additional pressures on our already fragile environment; a development the international community should applaud.

Although the People’s Republic of China has been investing in Sub-Saharan Africa (SSA) since the 1960s, the pace, shape, and scope of this investment have increased exponentially since the beginning of the millennium. Roads and other types of infrastructure, including energy projects, are being built, along with schools and hospitals, as China expands both trade and foreign direct investment (FDI) in SSA. While this development is linked to China’s need for energy, minerals, and other commodities, it is much more expansive and has been accompanied by a far-reaching political and diplomatic effort to establish close ties, partnerships, and friendly relations with African governments. It may herald a new era for many African countries and will undoubtedly have many important consequences for the nations and peoples of SSA. Our focus, however, will be the environmental consequences of this growing association.

As a rising economic power, China is in search of natural resources to fuel its phenomenal growth, and it has come to Africa for those resources. This is a familiar role for SSA, which has long been a source for natural resources, as Europeans exploited the continent first as colonizers and then, with other Western nations, as developers and investors. Unfortunately, extractive industries are often environmentally sensitive, and Chinese companies may be investing in areas that were previously inaccessible or judged too environmentally problematic by Western entities. Thus, projects may sometimes be even more environmentally challenging than usual. Moreover, oil and other fossil fuels emit greenhouse gases (GHG) that are intensifying climate change, and thus oil extraction and use are particularly dubious, even if it is highly probable African...
oil extracted by China would have been extracted in any event. Weak recipient governments may hesitate to insist upon, or simply lack, sufficient regulatory capabilities to impose adequate environmental laws and regulations, while as a newly industrializing nation, China may not bring the soundest environmental practices to its activities.

Perhaps, because it is currently in the midst of its own industrialization, China refuses to play by Western development rules or to be bound by international environmental standards. Instead, it is utilizing new development modalities and is employing a more respectful and cooperative mindset in its dealings with African nations.

It seems these techniques may be more effective than Western methodologies, raising the prospect of some measure of modernization for a continent that had largely been written off by many commentators and scholars. Industrialization inevitably affects the environment whether positively or negatively, albeit often negatively, making it in the interests of the wider international community that this growth take place in as sustainable a manner as possible. Despite acute environmental problems in some of its current African investments, China may still be poised to help make this happen.

Even as China has become the leading emitter of GHGs, it has begun to focus on steps to reverse this trend and also to deal with domestic environmental degradation. It is determined to become a leader in green technologies to address rising GHG emissions at home and abroad, and, as part of its strategy, to overtake the West in the nascent technologies that are likely to dominate a more ecologically conscious world. China is already the leading producer and exporter of green energy technologies, such as solar, wind, and water power, and has explicitly committed to bringing this expertise to SSA. Not only is China the leading producer of large hydropower in SSA, but it has also pledged to construct 100 clean energy projects, focusing on small hydropower, wind farms, and solar power. Expanding SSA’s potential for clean energy can play a significant role in increasing African electrification rates while simultaneously opening a development path geared toward resource conservation and climate sustainability.

If SSA becomes a proving ground for green energy, it may become one of the most important examples of sustainable development to date, even if a looming warming climate belies the entire notion of sustainability. If the poorest countries are to modernize, meaning if they are to gain any semblance of access to the benefits and burdens of industrialization, this might be the soundest means by which this can transpire, and it should be encouraged and supported by the international community.

This Article will examine and analyze these developments. Part I explores the scope and nature of China’s engagement with SSA. Although oil and other natural resources are an important part of this mosaic, China has much broader interests, as evidenced by the establishment and ever-deepening agenda and work of the Forum on China Africa Cooperation (FOCAC) and its relationships with more than 45 African nations, many of which are resource-poor. China’s policies in Africa are closely linked to its meteoric economic rise, the need for natural resources to fuel this growth, and its role as a rising world power. As a nation in the midst of modernization that has itself endured colonial domination, it has undertaken a decidedly different approach to African countries than that adopted by Western powers and has refused to accept Western development paradigms. This makes the China-Africa relationship much less amenable to Western pressure and interference and, given African preferences for the Chinese model, may actually pressure international financial institutions (IFIs) to change their policies, thus making China’s evolving environmental policies all the more important.

Part II turns to the environmental consequences of this engagement. It begins with a brief examination of China’s domestic environmental policies, which in the absence of international or strong target-country standards may have a significant effect on Chinese FDI in SSA. Moreover, a significant part of Chinese trade and FDI in SSA are state-led, and thus state policies may be especially relevant. China maintains a posture of non-interference and thus relies on domestic laws to define environmental protection parameters, rather than international standards, which it views as Western standards. Still, it may be that there is some convergence, which will also be explored. Part III turns to promising environmental possibilities regarding China’s engagement in SSA. As a continent in need of energy joins forces with a nation determined to be a world leader in green technologies, the possibilities for greener development are substantial. Finally, Part IV will conclude with general observations on the potential and pitfalls of China’s venture into SSA and its implications for the nations and peoples of this long-neglected region.

6. China’s share of total African oil production is 9%, while the U.S. share is 32% and Europe’s share is 33%. Cooke, supra note 2, at 30.
7. Having been on the receiving end of colonial domination may also contribute to Chinese viewpoint.
10. See infra notes 84-91 and accompanying text.
I. The Evolving Relationship Between China and the Nations of SSA

China’s rapid rise as a global economic power has been one of the most significant global economic developments of the last 20 years. China abandoned its centrally planned socialist economy in favor of a market-based system, albeit one with Chinese characteristics, successfully embarking on a path of rapid modernization that has transformed an agrarian nation into an industrializing colossus that is a leading global manufacturing center and one of the world’s largest exporters. This unprecedented economic surge has had tremendous repercussions for the entire world economy, reconfiguring global trade and economic relations. It has also unleashed South-South economic cooperation and collaboration, which have been flourishing as middle-income Southern Tier nations increasingly undertake economic activities in poorer Southern Tier countries. China has been especially determined on this front, actively pursuing economic and political relationships across the Global South, and SSA has been an important part of this trajectory.

A. The Broader Political Milieu

It is readily apparent that China’s objectives in Africa are not altruistic; it is seeking resources and developing economic partnerships to fuel its growth. While resources are a priority, there is undoubtedly also a much broader dimension to China’s engagement with SSA and a different approach to obtaining those needed resources. China is in Africa for the long haul, and it seems determined to fashion a wide-ranging, enduring relationship with African nations. In 2000, President Hu Jintao launched the FOCAC to promote economic cooperation between Africa and China, and it has become a key institutional mechanism undergirding the multidimensional relationship between China and approximately 45 African nations. At the FOCAC’s triennial meetings, China has set forth three-year plans that frame a comprehensive set of economic cooperation policies and enable regular dialogue and high-level meetings between Beijing and African heads of state. China has undertaken an expansive range of obligations to African nations, ranging from political and international affairs to economic and social

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17. There are other rising economic powers, and the largest, Brazil, Russia, and India, along with China, have been termed BRICs, or according to some commentators, BRICS, which includes South Africa. They have become important participants in the world economy and, given the economic woes of Europe and the United States, appear set to play an even larger role in low-income countries. They have also driven a resource boom. Reza Moghadam, New Growth Drivers for Low-Income Countries: The Role of BRICs 9 (Strategy, Policy, and Review Department, International Monetary Fund (IMF), Jan. 12, 2011).

18. The phrases Global South or Southern Tier refer to non-Western nations that share a history of colonialism or other forms of subjugation, have middle or low incomes, and tend to be populated by people of color. These nations are often referred to as developing countries, least-developed countries, and the like, as opposed to the industrialized, Western, and usually white, developed, or Northern Tier nations of the Global North. I have written extensively about development and prefer not to use the term “developing,” although sometimes it is unavoidable. See Ruth Gordon & Jon H. Sylvester, Deconstructing Development, 22 Wis. Int’l L. Rev. 1 (2004). Moreover, the term has become increasingly unstable with the rise of middle-income, industrializing nations, which are also referred to as emerging markets. Second World, or newly industrializing nations. This group includes Brazil, Chile, China, India, Panama, Singapore, South Africa, South Korea, Thailand, and others.

19. Davies, supra note 1, at 6. There have been five summits, the first four held in Beijing (October 2000 and November 2006), Addis Ababa, Ethiopia (December 2005), and Sharm el-Sheikh, Egypt (2009). The FOCAC was plainly part of a larger strategy to systematically and continuously engage the Global South, as the FOCAC model has been repeated in comparable forums, such as the China-Caribbean Economic and Trade Cooperation Forum (2003), the Forum on Cooperation Between China and Arab States (2004), and the China-Pacific Islands Economic Development Forum (2006). Id. at 87. FOCAC IV was held in Beijing in July 2012.

20. Id. at 6. Martyn Davies maintains that it is only because China is engaged in state-led capitalism that it can make broad pronouncements, because it can exert control over state enterprises. Others have taken a more nuanced approach, noting that while China has more control over its private sector than most other states, there is more independence in broad swaths of the private sector than this statement indicates. Still, central and provincial State-Owned Enterprises (SOEs) have played a large role in China’s FDI in SSA. See generally Raphael Kaplinsky & Mike Mottis, Chinese FDI in Sub-Saharan Africa: Engaging With Large Dragons, 21 EUR J. Dev. Res. 551, 555 (2009).

21. Brautigam, supra note 2, at 127-28. The first forum held in Beijing included nearly 80 foreign ministers from 45 African countries. The first action plan focused on intergovernmental relations, trade and investment, infrastructure, financial cooperation, debt relief, tourism, migration, agriculture, natural resources and energy, science and technology, medical care and public health, education and human resource development, the environment, and cooperation in multilateral forums. A small institutional body was established to evaluate progress on implementation. FOCAC II (Addis Ababa December 2003) brought Action Plan 2004-2006, which reorganized the extensive list of matters demarcated at FOCAC I into three main categories: political affairs; multilateral cooperation; and economic development. 44 African nations attended and economic development was the largest part of the equation with infrastructure; trade and investment; health and agriculture and energy development being priorities. The final declaration called for enhanced South-South cooperation, greater North-South dialogue to promote African development, and reforming United Nations (U.N.) agencies, such as the World Bank and the IMF. FOCAC III (Beijing November 2006) also detailed a large number of concrete tasks. Alden, supra note 12, at 9, 10.

22. Political cooperation includes high-level meetings, political dialogue and FOCAC meetings between foreign ministers in conjunction with the fall U.N. General Assembly General Debate, and other measures to promote contacts between legislatures and local governments. These meetings have been successful, the institutional mechanism to support the FOCAC has progressed, and a China-Africa Chamber of Commerce and Industry has been established. Alden, supra note 12, at 10-11.
development. China has generally kept its promises, not only realizing its commitments, but often doing so ahead of schedule and going beyond initial promises and targets. China has also furnished unprecedented levels of debt relief and other forms of financial assistance, including preferential loans and grants (in kind) to build public infrastructure projects.

These relationships will make it increasingly difficult for Western institutions to have a substantial influence over Chinese policies in Africa. Despite consistent and considerable criticism from Western nations, commentators, and media, many African governments view China as an alternative to Western arrogance and officiousness. Even if it is not a relationship between equals, China is interacting with African nations within a deepening network that also encompasses numerous cultural and social ties. Certainly, China’s need for natural resources has reinforced SSA’s status as a source of natural resources to fuel global manufacturing. In this respect, China’s FDI in SSA is similar to the involvement of Western governments and corporations in Africa both during and after the colonial era.

Yet, China seems more willing to pay for these resources at a fairer price, namely the modernization African nations crave. In other words, why appropriate when it is far easier and less costly to pay a reasonable price?

B. Trade and Investment

Since at least the turn of the millennium, China has built a network of trade, aid, and investment relationships with almost 50 African countries. The pace has been quite remarkable, with trade growing at a rate of 33% per year between 2000 and 2008, making China Africa’s third largest trading partner, surpassed only by the United States and the European Union (EU). Oil is becoming an increasingly important part of China’s energy mix and is its leading import from SSA, with a large portion of African exports coming from the oil-producing countries of Angola, Equatorial Guinea, Gabon, Nigeria, and Sudan. China also imports other natural resources, however, including minerals, metals, and agro-forestry products, and has trade relations with 35 countries, many of which are not oil-rich.

As trade has surged, so has Chinese FDI, which is expanding at a rate that exceeds its investment in any other part of the world. FDI has advanced along four broad channels: energy and mineral resources; infrastructure; global production networks; and small-scale entrepreneurial ventures. Private firms have concentrated on manufacturing and service industries, and the scale of private projects is significant and rising. By the end of 2008, the cumulative net stock of Chinese investment reached $7.8 billion dollars in more than 35 countries.

Manufacturing and resource-based investments have been in place since the 1980s, but 2000 marked a substan-

23. Economic cooperation is the most important category, with agriculture, investment, and business cooperation, trade, finance, infrastructure, energy resources, science and technology, information, air, and maritime transport at its core. Social development integrates development assistance and debt relief, human resources development, culture, education, medical care, environmental protection, tourism, people to people exchanges, and cooperation in news and media. Id. at 10.

24. Id. at 11.


27. African students are attending Chinese universities and are being trained as, inter alia, doctors, teachers, and engineers. There are also Chinese medical teams, teachers, and technicians assisting African governments. Cooke, supra note 2, at 33-35.


30. In some respects, China is patterning its development relationship with SSA on its former relationship with Japan and other Asian development modalities. Japan and China utilized resource-based loans, where China supplied Japan with natural resources while Japan assisted China’s modernization efforts. One of many differences between Asian states and the West has been the idea of the governmental state, where state entities are a more important element of the development mix. Brautigam, supra note 2, at 13, 18; Conrad et al., supra note 11, at 24-25.


32. China-Africa trade increased from $10.6 billion in 2000 to $106.8 billion in 2008. Chinese exports reached $5.8 billion, and imports from Africa were $56 billion. Conrad et al., supra note 11, at 23.


34. In 2005, 20% of SSA’s raw materials and 15% of its fuel exports went to China. Approximately 85% of Africa’s exports to China are from five oil-exporting countries, and according to some estimates, 50% of China’s investments are concentrated in a handful of countries that have natural resources. Urban, supra note 14, at 10.


36. Rising from $20 million per year in the early 1990s, Chinese FDI in Africa jumped to close to $100 million in 2000, to $400 million by 2005, and were more than $1 billion in 2006, a growth rate higher than Chinese FDI in any other part of the world. Zafar, supra note 13.

37. Id.

38. Moghadam, supra note 17, at 18. It has been estimated that there are more than 700 Chinese enterprises in more than 50 countries, employing close to 85,00 Chinese workers in a broad variety of sectors, including light manufacturing, services, agroprocessing, apparel, and telecommunications. Africa has also been on the receiving end of, inter alia, low-cost Chinese motorcycles, electronic goods, and tee shirts. Zafar, supra note 13.

tial change in focus as resources and infrastructure became unambiguous priorities.40 These sectors have been dominated by central and provincial State-Owned Enterprises (SOEs), whose investments are larger and more costly than most private projects.41 Large infrastructure and resource-extraction projects are structured quite differently from traditional Western interventions. Unfortunately, infrastructure has not been a central focus of Western development agencies as of late, which have instead concentrated on free market reforms, good governance, human rights, and other matters.42 Yet, African nations have very much sought funding to construct infrastructure, and China, a fellow developing country, also views it as a critical component of modernization. The parties have linked China’s need for resources with Africa’s need for infrastructure to fashion a mutually beneficial strategy. Known as the Angola model, infrastructure is acquired by African nations through resource-based loan agreements that secure the flow of natural resources to China in return for China financing and constructing infrastructure projects.43 Chinese contractors are building roads, railroads, fiber optic cables, and hydroelectric power dams, and developing soft infrastructure projects, such as schools, hospitals, stadiums, and government office buildings.44 These projects appear to be assisting ordinary people, irrespective of the inclinations of their governments.45

Over time, a mind-numbing aggregate of conditions were imposed to obtain International Monetary Fund (IMF) and World Bank financing.46 By contrast, China follows a policy of non-interference in the domestic affairs of other states and does not encumber its investments with conditions and requirements.47 Thus, while China is not funding and propping up corrupt governments, it also does not require good governance or the many other conditions imposed by Western donors. China contends that strong and sustainable economic growth and social stability will eventually result in good governance, the rule of law, environmental protection, and the observance of human rights; Western developers believe the reverse and have made these requisites conditions for funding.48 Not surprisingly, African governments prefer China’s approach, and it may prompt Western funders to reassess their policies and tenets as Chinese loans and assistance open fresh avenues of funding.

By providing additional financing options and outpacing World Bank and IMF credit levels, China is undercutting the overwhelming influence and domination these institutions have long exercised over African governments,49 and the international community is not pleased with this turn of events.50 Many concerns have been raised about China’s role in Africa, including its negative influence on governance, human rights, local employment, labor conditions, product quality, and the sustainability of the continent’s debt burden.51 China is also charged with environmental degradation and the depletion of finite natural resources.52 There is undoubtedly some merit to these claims.53 China’s need for natural resources has reinforced SSA’s position as a supplier of natural resources for global manufacturing, and in this respect, its FDI is no different than that of Western governments and corporations both during and after the colonial era.54 Moreover, there have been serious environmental problems with a number

40. Resources are important, but relations have been instituted with almost all African countries, whether or not they are oil- or mineral-rich. The relationship between China and Africa is also more focused on mutual benefit, and while Chinese companies definitely profit, China has been more willing to focus on projects African countries desire. BRAUTIGAM, supra note 2, at 277-81.
42. Beginning in the 1980s, the Washington Consensus began to dominate development policy. It proposed 10 policy prescriptions including, inter alia, fiscal discipline, tax reform, reordering public expenditure priorities away from subsidies, privatization and market deregulation, trade liberalization, and easing barriers to FDI. STEFAN HAFER, THE BEIJING CONSENSUS: HOW CHINA’S AUTHORITARIAN MODEL WILL DOMINATE THE TWENTY-FIRST CENTURY 57 (Basic Books 2010); JOHN E. STIGLITZ, GLOBALIZATION AND ITS DISCONTENTS 59-61, 31-34 (2003). In the early post-colonial era, infrastructure was a priority for development agencies. The shift began in the 1970s, when the focus became basic needs, which was followed by a series of other priorities, and accelerated with the advent of the Washington Consensus, which stressed free-market reforms, good governance, and other matters. Gordon & Sylvester, supra note 18, at 33-49.
44. Kouassi, supra note 28, at 6 C. For example, Chinese companies are mining oil in Angola and Sudan, building roads in Ethiopia, are an active part of the electricity sector in Kenya, building infrastructure and developing the tourism industry in Sierra Leone, and servicing mobile phone networks in Kenya and Nigeria. Throughout the entire Sub-Saharan continent, Chinese companies are constructing much-needed infrastructure, including dams, ports, and roads, and are helping to renovate government offices. Zafar, supra note 13, at 105.
45. Cooke, supra note 2, at 39-41. “By the end of 2009 China finished more than 500 infrastructure projects, including the completion of over 2000 km of railroads, more than 3000 kilometers of roads, 11 bridges, dozens of hydropower stations and ports.” HUANG MEILO & QI XIE, Forum on China-

Africa Cooperation: Development and Prospects, FOCAC Fifth Ministerial Meeting, supra note 26, at 10.
47. The one consistent exception has been conditioning assistance on nonrecognition of Taiwan. Mario Esteban, Diplomatic Battle Between Beijing and Taipei in Latin America and the Caribbean, 25 CHINESE (TAYWAN) Y.B. INT'L. L. & AFF. 65, 74-75 (2007).
49. In 2006, China extended nearly three times the sums offered by these institutions. Alden, supra note 12.
51. Western scholars and the media contend that China’s methodology is neo-colonial because it discourages unions, creates limited job opportunities for local African workers, and the few jobs that are sometimes generated are low-skilled, low wage, and may involve unsafe working conditions. Bosshard, supra note 25, at 5.
52. Urban, supra note 14, at 12.
53. For example, assistance is tied and Chinese corporations rely on Chinese workers, even if those workers live a much more Spartan existence than Western aid workers, who are paid huge salaries. BRAUTIGAM, supra note 2, at 157.
54. Bosshard, supra note 25, at 4. Kouassi, supra note 28, at 7 (noting that Africa needs a strategy if it is not to become a Sino-European battleground for raw materials to fuel industry and markets for their manufactured goods).
of Chinese investments in SSA, including projects undertaken by central and provincial SOEs. But there are also several implicit assumptions at work in these assertions. First, Western critiques assume that Western interests are more progressive and therefore better for Africans and poor people in general. Unfortunately, while post-Cold War Western governments may attempt to encourage policies that endeavor to take the environment, human rights, and other such concerns into account, Western-based multinational corporations are not as conscientious, especially when it comes to oil and other extractive industries. Second, these appraisals and assessments assume that Western commentators should and can influence, and even monitor, relations between other members of the international community. This speaks to the status of poor and perhaps particularly African nations in the global hierarchy; they are deemed in need of our counsel and protection. Yet, it is not apparent that China or African nations remain quite as willing to accept Western prerogatives or guidance in an era where funding is coming from non-Western sources and the policies being pursued appear to be more effective and in line with the needs and goals of African nations. Thus, as Western influence wanes, Chinese environmental policies and strategies become ever more important if we are to discern the environmental impact of China’s engagement with SSA.

II. Undesirable Environmental Consequences

There are three possible sources that might determine the environmental parameters of Chinese FDI: China’s domestic policies; the laws of the nation where investment takes place; or international standards governing FDI. As countries industrialize, economic growth frequently takes priority over environmental regulation, and China’s experience is no exception. While China is now focused on enacting and implementing environmental laws and regulations, the road has been difficult and success sometimes tenuous. China’s policies are not the most promising, which is reflected in some of the environmental problems and lack of standards found in their foreign investment policies and strategies. African nations generally have not complained very much, nor have they vigorously pressed for greater environmental protection. While these nations may have domestic environmental protection policies, the laws and their enforcement may be weak and environmental concerns may be near the bottom of a long list of priorities. Finally, international environmental standards might be utilized to govern investment in SSA, but Beijing generally views them as proxies for Western policies. Although it has been somewhat more receptive of late, China has resisted incorporating them into its “going out” strategy, citing its policy of non-interference. Yet, non-interference may mean relying on weak national standards that governments feel too weak to insist upon.

A. China’s Domestic Environmental Paradigm

I. Environmental Calamity

Beijing has made economic development and growth its overriding priority and in the process neglected environmental standards, with negative consequences. China has managed to lift millions out of poverty, but it lacks sufficient natural resources to sustain this growth. Resources are being overutilized and as China’s economy continues to expand at a rate of 10% or more each year, the demand for natural resources—coal, oil, timber, natural gas, and potable water—will only intensify and place enormous pressures on ecological services. Current pollution levels are severe and almost one-third of China’s territory is affected by acid rain. In addition, coal is China’s primary source of energy, and the burning of coal has resulted in acid rain and severe air pollution. More than 75% of the water surfaces are polluted, and the quality of China’s lakes and rivers is declining.

55. During the Cold War, such concerns were often secondary; they have now been replaced by seeing the world through a national security post-9/11 lens, Halper, supra note 42, at 76-77.


57. While the policies of African nations are also important, a survey of such policies would be monumental and are beyond the scope of this Article.


59. China has a policy of noninterference and purports not to prescribe any particular development model for other nations. Cooke, supra note 2, at 32-33. On the other hand, such export is inevitable. Bosshard, supra note 25, at 14.


61. China has sustained an average annual growth of about 10% over the past two decades, significantly increasing the standard of living for millions of its citizens. It is the world’s largest nation, with an estimated population of 1.3 billion people. Yet, China has a relatively small area of cultivated land and few water resources. Economic development has dramatically increased the demand for energy and natural resources, such as water and land. China’s natural resources are also among the most exploited and polluted in the world. Beyer, supra note 15, at 187. For an exhaustive examination of the environmental impact of modernization on China, see COST OF POLLUTION IN CHINA ECONOMIC ESTIMATES OF PHYSICAL DAMAGES, World Bank xii (Rural Development, Natural Resources and Environment Management Unit 2007), available at http://sitesresources.worldbank.org/INTENETPREVENVIRONMENT/Resources/China_Cost_of_Pollution.pdf [herein-after COST OF POLLUTION].

62. For instance, groundwater is so overexploited that it is placing severe stress on lakes and other freshwater sources. Indeed, China faces water shortages, water pollution, and flooding. In addition to raw sewage, modern toxic industrial waste and pesticide runoff from agricultural activities have worsened water pollution. COST OF POLLUTION, supra note 61, at xi-xvii.

of energy and it is now the world’s largest emitter of carbon dioxide (CO₂), accounting for 14% of the total global carbon output. Current projections indicate that China’s reliance on coal could expand to 77% by 2020, which will only aggravate worsening atmospheric pollution and accelerate the pace of global climate change.

2. Domestic Environmental Regulation

As it has become increasingly apparent that growth at any price has immense costs for public health, the environment, and ultimately the economy, Beijing has taken steps to impose environmental regulations. Since the late 1970s, and particularly since 2004, wide-ranging domestic environmental regulations and policies addressing a multitude of environmental issues have been enacted. A provisional Environmental Protection Law (EPL) was promulgated in 1979, and updated in 1989, and the State Environmental Protection Administration (SEPA) was created in 1984. These efforts have continued with new environmental commitments covering energy intensity, pollution, water, forests, and more general policies, such as prevention, environmental impact assessments, and land use planning. The Green Credit Policy and other measures adopted by SEPA have promoted compliance by domestic polluters.

Still, China’s environmental regime has faced implementation difficulties, due to deficiencies in the laws themselves, staffing and technical shortcomings, and the urgency still accorded to economic development. Moreover, national laws are made by SEPA, but often enforced by Environmental Protection Bureaus (EPBs) whose allegiance is to local governments with few incentives to impose environmental laws they often view as inimical to their economic interests. Local governments...
sponsoring or own industries and compete with other entities to attract business and commerce. Most regard environmental regulations as incompatible with economic growth and thus seek to undermine them. Moreover, local governments may also own and control entities that invest abroad, including in SSA.

B. African Policies: Impact and Pushback

Historically, the most lucrative FDI in SSA has been environmentally sensitive, so foreign investment has often come at a high environmental cost. A significant part of Chinese FDI entails oil and mineral resource extraction, which are environmentally problematic sectors. Thus, to the extent that China is investing in extractive industries, it is replicating previous Western FDI in environmental terms. Moreover, China often goes where westerners have not bothered to tarry, which may raise additional environmental concerns. There are also fears that as environmental regulation increases at home, Chinese companies with poor environmental track records may be tempted to invest in nations with weak regulatory regimes, such as the nations of SSA.

Pressure from African governments for stronger environmental regulation has perhaps not been strong enough. To the extent that there are misgivings about aspects of

81 Local institutions. EPBs are responsible for environmental protection within their jurisdiction and have wide discretion in addressing environmental concerns. But they are funded, controlled, and under the direction of local entities that themselves have considerable power, discretion, and autonomy. Beyer, supra note 15, at 188-90. EPBs answer to local governments and SEPA, yet SEPA supervision is nominal, while EPBs are part of local governments. Their budgets are funded by local governments that themselves may have special connections to local industries. Beyer, supra note 15, at 207. Predictably, China has had difficulties enforcing environmental regulations adopted by the central government. Nagle, supra note 28, at 623.

82 Local governments have considerable administrative and fiscal autonomy, which has generated considerable pressure to attract and promote commerce and to build local economies. They often sponsor or own industries and consider environmental regulations incompatible with economic growth. Beyer, supra note 15, at 189. EPBs frequently evade and circumvent national policies and environmental laws because of local economic considerations and, at times, corruption. EPBs must enforce SEPA policies without disrupting industrial output, employment creation, or economic growth. Sitaraman, supra note 63, at 311.

83 National policies may beget local countermeasures to evade and exploit loopholes in national laws. Local governments and EPBs have colluded to help polluters evade or circumvent environmental regulations; waived pollution discharge fines; and suppressed reports documenting the poor environmental performance of local industries. Sitaraman, supra note 63, at 309, 311.

84 For example, in Gabon, Sinopec, a Chinese company, explored for oil in Loango National Park until the National Park Service ordered exploration to stop in September 2006. Conservation groups noted that oil exploration in Loango threatened rare plants and animals, and that the environmental impact study had not been approved by the environment ministry. In January 2008, Sierra Leone banned timber exports because Chinese and other logging companies were plundering forests and not respecting the law.

85 For instance, after old growth logging was banned in 1998, Chinese timber companies quickly moved abroad, and China soon became the world’s largest timber importer. Bosshard, supra note 25, at 15.

86 Chinese projects have been charged with devastating local textile (and other) industries and criticized for preferring Chinese over African workers, or not complying with local labor laws. Id.

87 Cooke, supra note 2, at 42-43.

88 In September 2006, an African Union task force urged all participants to ensure that China gives more attention to protecting the environment in its investment practices. Bosshard, supra note 25, at 9.

89 Maxwell M. M. M. Akoyoko, “AfricA, China, and the “Green” Factor,” Consultancy Af

90 Akoyoko, supra note 83, at 2.

91 Bosshard, supra note 25, at 9.

92 Id.

93 The Merowe Dam in Sudan is a case in point. Canada, Malaysia, European and Arab countries refused to fund the project. Bosshard, supra note 25, at 6. 9. China has also been criticized more directly. The president of the European Investment Bank (EIB) noted that, “the competition of the Chinese banks is clear. They don’t bother about social or human rights conditions.”

94 The Chinese sanning projects from under the Bank’s nose in Africa and Asia, after offering to undercut EIB conditions on labor standards and the environment.” Id. at 10.
fears of a race to the bottom regarding the environmental standards employed by IFIs.

The Chinese government has rejected criticism of its environmental record in Africa. In response to World Bank accusations that it was undermining environmental standards, Chinese officials insisted that its foreign relations entail non-interference in the internal affairs of other nations, and just as China does not accept other countries imposing their values, social systems, or ideologies upon China, it will not impose its system upon others. Indeed, China regards international standards as Western standards, which they do not consider binding. Nonetheless, intergovernmental organizations and nongovernmental organizations have continued to pressure Beijing to accede to international standards, and their efforts have yielded a few modest concessions.

D. Compromise and a Modicum of Convergence

Non-interference notwithstanding, ignoring workers’ and human rights, displacing populations, and causing environmental destruction can lead to instability, and instability is not good for business. After difficulties in several countries, Beijing became increasingly aware that the environmental damage caused by Chinese ventures could have undesirable repercussions. Strategies adopted by the State Council, the Ministry of Commerce, China Exim Bank, and other agencies suggest increasing sensitivity to the environmental footprint of Chinese companies abroad.

A series of project guidelines cover such themes as workers’ rights, product safety, community relations, and environmental impact assessments. Concessional loans from China Exim Bank are an integral part of official development assistance, and the bank often finances large government-owned projects. China Exim Bank policies are an important indicator of broader government policies, and the bank has adopted requirements that incorporate Chinese norms, but first and foremost hinge on host country standards. Moreover, while China Exim Bank does not recognize a legal or political obligation to support or accede to standards drafted by international bodies, it has signed two memoranda of understanding with the World Bank and the International Finance Corporation to cooperate on African energy and transport projects. While these obligations are not mandatory, it does indicate the political intentions of the Chinese government, at least with respect to large projects undertaken by government-owned and financed entities.

Accordingly, it seems local laws will be the most salient in these projects. That said, there are also strong indications that all parties are more interested in taking environmental costs into account. Infrastructure and extractive ventures are largely within the purview of Chinese government-owned corporations and are financed by the China Exim Bank. Thus, these entities can more easily incor-

94. Bosshard, supra note 25, at 10. The head of the EIB recommended that international financial institutions (IFIs) lower their standards in response to Chinese competition, arguing that IFIs should avoid excessive conditions and had to think about the degree of conditionality they impose.

95. Bosshard, supra note 25.

96. I think this is basically accurate. Western interests have systematically dominated the international institutions they created and have consistently and steadfastly ignored the views of Southern states, especially the poorest nations. What masquerares as international is often Western, as a reluctant South is ignored or forced to go along. See generally Gordon, supra note 19. Of course, with truly international environmental problems such as ozone depletion and climate change, this equation has shifted. Ruth Gordon, Climate Change and the Poorest Nations: Further Reflections on Global Inequality, 78 Colo. L. Rev. 1559, 1600-09 (2007).

97. Bosshard, supra note 25, at 10. Despite China’s refusal to accede to OECD guidelines, the OECD published its first Environmental Performance Review in 2007 and formulated recommendations for adjustments. It argued for stronger governmental efforts to ensure that Chinese corporations operating overseas, particularly in such environmentally sensitive industries as forest products and mining, are part of China’s professed goal of an international reputation for sound environmental management and sustainable development. It recommended improved government oversight and environmental performance in the overseas operations of Chinese corporations.

98. Bosshard, supra note 25, at 11. Cheng, Siewei, a leading member of the People’s Congress warned that “irresponsible practices” had prevented Chinese companies from expanding overseas and predicted that even in developing countries, foreign companies that turn a blind eye to their social responsibilities will be kicked out of the market. President Jiruao repeatedly urged Chinese businesses to respect local laws during his February 2007 visit to Africa. Id.

99. In October 2006, the State Council issued nine principles to regulate foreign investments by Chinese companies. They included attending to environmental protection. Bosshard, supra note 25, at 12. China established the China Export Import Bank in 1994 to promote Chinese exports; it reports directly to the State Council, although the goal is to eventually transform the bank into a commercial institution. Bauttagam, supra note 2, at 79-80. The bank is more than the administrative arm of China’s export promo-

100. Ninety percent of China Exim Bank export credits go to SOEs and to large projects (of more than 100 million renminbi (RMB) each). As part of China’s “going global strategy,” China Exim Bank offers strategic overseas investors an interest rate discount. At the end of 2007, the outstanding loans on China Exim Bank’s balance sheet amounted to RMB 321 billion. Bosshard, supra note 25, at 3.

101. Bosshard, supra note 25, at 12. The policy also stipulates an active role for China Exim Bank in monitoring environmental impacts throughout the project cycle and reserves the right to cancel a loan if environmental effects are not adequately addressed. According to the OECD, Chinese officials will discuss changes in project-related governance to ensure loan repayment, but it is not entirely clear if financiers also apply this assertiveness to the social and environmental appraisal of projects. Id.

102. In September 2005, the Chinese Ministry of Commerce suggested that the OECD and China cooperate on issues of corporate social responsibility and that the OECD further explain its Guidelines for Multinational Enterprises to Chinese companies. Bosshard, supra note 25, at 12.

103. Bank, supra note 25, at 13. Under these Memoranda of Understanding, financial institutions will cooperate in World Bank African energy and transport projects, IFC equity investments, and advisory services on environmental issues.

104. Control over the numerous provincial, municipal, and private Chinese enterprises that establish businesses, export goods, or invest in SSA, however, may be more limited and thus some Chinese ventures may contradict government appeals for improved corporate social responsibility. Bosshard, supra note 25, at 13. See generally Simon Zadek et al., Responsible Business in Africa: Chinese Business Leaders’ Perspectives, available at http://www.hks.harvard.edu/m-rcbg/CSR/publications/workingpaper_54_zadeketal.pdf.

105. Kaplinsky & Morris, supra note 20, at 554-55. The Chinese Development Bank (CDB), one of China’s policy banks, is also becoming increasingly involved in financing overseas energy projects, including in SSA. Kristen McDonald et al., Exporting Dams: China’s Hydropower Industry Goes Global, 90 J. Envtl. Mgmt. S294, S297 (2009).
porate environmentally friendly mechanisms into their corporate policies and strategies, which is the course the central government is attempting to take at home. Projects can be structured in an environmentally responsible versus irresponsible manner as a matter of government policy, and if environmental impact statements are a standard part of corporate policy at home, they can be standard operating procedure abroad. This should square with China’s policy of non-interference, as all enterprises would routinely employ these procedures across the board.

There have been environmental problems and protests by local communities, as well as calls for more observance of environmental standards. Therefore, it seems highly unlikely that governments would resist additional environmental protection, especially if it is built into projects and is an integral part of corporate policy. Like human beings everywhere, African peoples and their governments would prefer cleaner water and air, the preservation of natural resources, and the other benefits of a sustainable environment. It is one thing not to insist on environmental safeguards if to do so might put nations at a competitive disadvantage for FDI and funding. It would seem to be a win-win situation, however, when the investor is ready, willing, and able to invest in a more environmentally favorable manner and there is little or no risk of losing out to nations that do not insist on high environmental standards. Poor countries are highly unlikely to resist, and at least central SOEs can afford to take this important step.

III. Potential Constructive Consequences: Linking China’s Green Leap Forward to Africa’s Need for Energy

As China begins implementing environmental policies to clean up its water, air, and soil, it is also taking account of the implications of climate change, a global problem to which it is now the world’s largest contributor. Beijing is cognizant of the nation’s vulnerability to the consequences of climate change and thus has a stake in reducing GHG emissions domestically and internationally, even if thus far it has been a laggard in global efforts to address this quandary. As China attempts to improve energy efficiency at home, it also plans to export these technologies and is positioning itself to become an international leader in renewable energy and a more sustainable development that encompasses “green growth that will hopefully create greener economies.”

108. This “green leap forward” could dovetail with the needs of SSA, an area also attempting to modernize and a region in dire need of modern energy. Renewable energy solutions could play a significant role in avoiding future emissions and preventing carbon lock-in, which is costly to reverse. China appears ready, willing, and able to provide the necessary funding and technology to bring these possibilities to SSA.

A. Africa’s Energy Needs

I. The Energy Deficit

While China is the largest emitter of GHGs, Africa’s contribution to climate change is negligible, accounting for only 2.5% of global GHG emissions. This is largely because SSA has the world’s lowest rate of access to modern energy, only about one-quarter of its 800 million inhabitants have electricity. In total, Africa’s generating capability is 47 gigawatts (GW) of electricity, which is less


110. Conrad et al., supra note 11, at 24-25. Net emissions from deforestation, however, are a problem that renewable energy solutions could help mitigate. Id. The Clean Development Mechanism funds projects to reduce GHG emissions in non-Annex I or developing countries. Gordon, supra note 96, at 1608-11. In 2008, total CO2 emissions from the African continent were approximately 600 million tons, less than German emissions of 800 million tons. Most SSA emissions reductions are from South Africa, which is the only country emitting significant amounts of GHGs. Id.


113. Electricity is measured in watts. Watts are very small units, so the terms kilowatt (kW), megawatt (MW), and gigawatt (GW) are employed. One kW equals 1,000 watts. One MW equals 1,000 kW or one million watts. One GW equals 1,000 MW or 1 million kW or 1 billion watts. To put this in context, one MW typically powers 1,000 households at any given moment in time, roughly speaking. MW and more particularly GW are most commonly used to describe the capacity of generating units like wind turbines or other power plants. The entire power-generation capacity of the

108. The OECD has defined green growth as “promoting economic growth while reducing pollution and GHG emissions, minimizing waste and inefficient use of natural resources, and maintaining biodiversity.” The U.N. Economic Commission for Africa defines a “green economy” as “enabling economic growth and human development without exposing future generations to significant environmental risks and ecological scarcities while creating new opportunities for green growth and employment creation.” Akyoko, supra note 83 at 1, citing Investment for Green Growth, OECD, http://www.oecd.org. A 2008 Chinese White Paper, Policies and Actions for Addressing Climate Change, committed to working toward global sustainable development with other countries. McElwee, supra note 107; Policies and Actions, supra note 64, at 46-50. Guidelines adopted by the State Council, the Ministry of Commerce, China Exim Bank, and other agencies also suggest that China intends to address the environmental footprint of Chinese FDI.


110. Conrad et al., supra note 11, at 24-25. Net emissions from deforestation, however, are a problem that renewable energy solutions could help mitigate. Id. The Clean Development Mechanism funds projects to reduce GHG emissions in non-Annex I or developing countries. Gordon, supra note 96, at 1608-11. In 2008, total CO2 emissions from the African continent were approximately 600 million tons, less than German emissions of 800 million tons. Most SSA emissions reductions are from South Africa, which is the only country emitting significant amounts of GHGs. Id.


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than 0.6% of the global total and the equivalent of Norway’s total output.114 Thus, the need is great and the consequences of this insufficiency are profound.115 Remediating the region’s dearth of adequate supplies of electricity will require an estimated 93 billion dollars.116 Africa’s electricity-generating capacity is expected to triple by 2030, with more than 200 GW of new capacity;117 an important question for all of us is the means by which this electricity will be generated.

2. Energy Realities and Possibilities

Currently, small-scale biomass118 provides one-half of SSA’s energy.119 In some nations, it accounts for up to 70-80% of total energy consumption,120 and thus many countries have devised regional or national bio-energy programs. There is also largely untapped commercial energy—including hydropower, oil, and gas, which are significant, but unevenly distributed.121

With the exception of large hydropower, renewable energy sources remain underutilized due to a lack of financing and expertise.122 Yet, SSA possesses immense potential for solar, wind, and in some regions, geothermal energy.123 For example, solar thermal appliances have a distinct role in the African market, and solar water heaters suggest a particularly promising alternative to the ubiquitous practice of burning wood and charcoal for fuel, and could reduce deforestation, which would also reduce Africa’s modest contribution to climate change.124 Renewable energy use is often limited to remote off-grid applications, and thus there has been some progress regarding solar home systems, household- and facility-scale biogas digesters, improved cook stove projects, and LED lanterns.

Substantial stretches of SSA have year-round sunlight125 and tropical zones enjoy a vast potential for solar photovoltaic (PV) electricity.126 Six hundred million people could have electricity based on PV potential alone, yet Africa only accounts for 15 megawatts (MW) of the world’s 15 GW of total installed global solar PV capacity.127 There is also significant potential for wind power, although as of 2009, the continent produced less than 600 MW of installed wind capacity, mostly in East Africa, where Ethiopia, Kenya, Tanzania, and others were planning or are currently utilizing this resource.128 Geothermal energy uses the earth’s heat as an energy source129; its use in SSA is also concen-
Hydropower

Whereas other forms of renewable energy still play a much lesser role,

large hydropower is currently the dominant component of SSA’s energy mix,

and there is still abundant potential beyond current usage levels. SSA has

290 GW of economically feasible hydropower capacity, of which only 8% has been developed. Accordingly, large and small hydropower projects are expected to expand current capacities in a number of countries. This is also an arena where China has focused both at home and abroad. Hydroelectric power has many positives that are only mounting in the age of climate change. Rather than exploiting climate-damaging fossil fuels, such as coal, hydroelectric power relies on water, a renewable resource, to create electricity.

Yet, to ensure a continuous, dependable source of energy, hydropower requires damming rivers, streams, and canals to channel water from higher to lower elevations, allowing it to reach a velocity that turns turbine blades to produce electricity. As would be expected, larger dams generate more electricity at a lower cost than smaller dams. Moreover, while the initial cost of constructing dams is rather high, the actual cost of generating electricity is inexpensive, and energy produced by hydroelectric dams is more reliable and predictable than other renewable sources, such as wind and solar.

Historically, dams were favored by both the North and South as a means to create sustainable, renewable hydroelectric power. They are found throughout the industrialized world and have been financed by IFIs such as the World Bank for over 50 years. At its peak, the World Bank loaned approximately $2 billion annually to construct enormous hydropower projects. Dams can buttress flood control on rivers that are prone to flooding, create jobs and sometimes tourism, and increase irrigation for agriculture. But dams can also have negative environmental and societal drawbacks. Dams can negatively affect river ecosystems and cause flooding that destroys agricultural acreage. They can disrupt river habitats, displace naturally flowing sediment, and create stagnant reservoirs that facilitate the growth and spread of water-borne diseases like malaria. Just as disquieting, hydroelectric dams can significantly and adversely affect populations living within
close proximity of a dam site.\textsuperscript{149} Besides losing farmland, upstream flooding has forced the relocation of towns, villages, and communities.\textsuperscript{150} Hydrologists estimate that the damaging environmental effects of large-scale hydropower dams have adversely affected approximately 472 million persons worldwide.\textsuperscript{151}

B. The China Factor

I. Large Hydropower

China has been building large hydropower projects both at home and abroad, including in SSA.\textsuperscript{152} Indeed, many SSA infrastructure projects have been large hydropower ventures,\textsuperscript{153} making China a major large hydropower player on the continent. Building on its domestic experience and expertise in constructing large hydropower projects, China has either already supplied or plans to provide financial and construction capabilities for more than 70 projects in 29 African countries.\textsuperscript{154} Yet, China’s domestic environmental record in this arena has been problematic, if judged by contemporary international standards, and some of their African dam projects have also presented environmental and other problems.\textsuperscript{155} Nonetheless, with many pending projects, Chinese involvement in large SSA hydropower is assured for many years to come.\textsuperscript{156}

Still, there are also indications that large hydropower projects are being supplemented by other forms of renewable energy as water resources become more unstable (due in part to climate change). For example, the Ethiopian Genale Dawa and Chemoga Yeda hydropower projects also included an agreement with China HydroPower to develop several wind farms with an installed capacity of 51 MW each.\textsuperscript{157} Moreover, while large hydropower projects will undoubtedly continue to play a major role in electrifying Africa, China’s resolve to export green technologies to Africa and beyond may prove to be a valuable addition to the mixture.

2. Beyond Large Hydropower

China is expanding its wind and solar PV industries in international markets, with lenders providing financial support for ventures that include Chinese wind and solar energy manufacturers.\textsuperscript{158} Environmental collaboration and assistance are new arenas for Chinese foreign aid, but as China turns to green technologies to close its technology gap with the West, progress on renewable energy in SSA strongly coincides with efforts to establish Chinese companies as leading green technology suppliers in global markets.\textsuperscript{159} Africa has long been both a laboratory and catalyst for Chinese companies initiating global expansion strategies, and thus entering the African renewable energy sector is a particularly logical move. In addition, China views its deployment of clean energy in SSA as both providing electricity for Africa’s development and reducing its dependency on imported fuels.\textsuperscript{160} From the African perspective, China can deliver both the money and technology to unleash its immense potential to utilize renewable energy. Indeed, this is already beginning to take place.\textsuperscript{161}

Chinese companies are expanding wind, the solar PV industry, and other renewables in emerging markets, with financial support from China Exim Bank and other sources. The largest power developments on the continent, such as Ethiopia’s Gibe II (1,870 MW), Nigeria’s Mambila (2,600 MW) and Sudan’s Merowe (1,250 MW),” World Wildlife Fund, supra note 111, at 13. For a list of international dam projects undertaken by Chinese companies, see McDon- ald, supra note 105, at 297.

159. Conrad et al., supra note 11, at 33. “In September 2009, the Ethiopian Electric Power Corporation (EEP) signed a major power construction deal with several Chinese companies” to build the Genale Dawa and Chemoga Yeda hydropower projects. Interestingly, these contracts included an agreement with China HydroPower to build several wind farms with an installed capacity of 51 MW each. “Ethiopia’s electricity sector is almost completely dependent on large hydropower and droughts have led to recurrent short-ages.” Thus, expanding wind power has been identified as a possible alternative to diversifying power generation. These wind farms will be financed through China Exim Bank.


161. Conrad et al., supra note 11, at 7-8.
Chinese lenders, whose most significant condition is that ventures include Chinese wind and solar energy manufacturers. The business motive is comprised of three elements: exporting renewable energy equipment; investing in local African manufacturing capabilities; and developing renewable energy capacities. The renewable energy equipment industry is set to establish a presence in foreign markets that includes and then surpasses increased exports, and China Exim Bank is prepared to provide financing. Renewable energy equipment manufacturers are attempting to establish a toehold in African markets and then expand their exports of renewable energy products.

For example, China’s Suntech Power, one of the leading PV producers in the world, has undertaken a 20 MW solar PV project with South African developer Yingli Green Energy International Trading Company Ltd. In April 2010, Tanzania’s leading solar power equipment contractor, Rex Investment Limited (RIL), announced a comprehensive partnership agreement with Suntech, whereby RIL will be the exclusive distributor of Suntech solar panels, supplying solar power equipment to the Tanzanian market and neighboring countries in East and Central Africa. RIL and Suntech are focusing on “untapped demand in rural communities that are not connected to national power grids.” While China’s initial attempt at a joint venture to build Kenya’s first PV manufacturing plant failed, Chinese efforts to establish PV production capacities in Africa are likely to continue. Suntech has also committed to developing a 100 MW solar power plant in South Africa with Chinese companies as the leading suppliers of PV and other solar panels. Although renewable solar energy projects are initially costly, solar energy will likely be harnessed free of cost.

With a saturated domestic market and facing fierce competition in Europe and America, Chinese wind turbine manufacturers have turned to African markets. Goldwind, one of the world’s largest wind turbine producers, has secured a turbine deal in Ethiopia and opened an office in South Africa. In conjunction with Tanzania’s National Development Corporation, the Dalian International Economic and Technical Cooperation Group has undertaken the Singida Wind Power Project with a $100 million China Exim Bank loan. Hydrochina Engineering Corporation will develop a renewable energy research and development center at one of Tanzania’s universities, and China has recently begun showing interest in the renewable energy market in South Africa, investing in both wind and solar. China Longyuan Power Group Limited (Longyuan Power), the largest wind power producer in Asia, is part of a South African joint venture to develop African wind power and has also announced plans to build a modern blade and turbine manufacturing facility. Mulilo Renewable Energy (MRE) and Longyuan Power will develop six South African wind parks that in total comprise 1,500 MW of capacity. Longyuan Power has also pledged to transfer wind turbine technology to South Africa by means of a blade and turbine manufacturing facility in South Africa’s Western Cape.

There have also been projects beyond wind and solar. China Exim Bank financed Tanzania’s $700 million funding for the Mzani Bay gas-for-electricity project, which is projected to generate 160 MW in the Mwara region. China Exim Bank is also funding 90% of the $1 billion natural gas pipeline from Dar es Salaam to Mzani Bay. Small-scale projects are also becoming more common, as Africa’s lack of infrastructure induces small-scale renewable energy projects to generate electricity and other energy commodities for local communities. Proposals with various African countries have included biogas technology, hydropower, and solar and wind power. China has also offered training on “clean energy, climate change, forestry management, and desertification treatment and prevention.” An example of training and joint cooperation includes an alliance with Kenya to develop a range of projects.


163. WORLD WILDLIFE FUND, supra note 111, at 18. For example, the Chinese wind power company, Ming Yang, secured a $5 billion loan from the China Development Bank for 2011-2015 to support expansion plans in China and abroad. Chinese turbine producer Goldwind, one of the world’s largest turbine producers, secured a deal with Ethiopia in 2011 and has opened an office in Cape Town, South Africa. Id.

164. Conrad et al., supra note 11, at 7. Of course, not everyone agrees with this assessment. For example, some maintain that by investing in green projects in Africa, China is more interested in business opportunities than green goals, which is something only African governments can deliver. Akoyoko, supra note 83, African governments must compel China to add “green growth” to their investment strategy and portfolio because investors are unlikely to be concerned with such goals. Thus, the countries where that investment is taking place must insist upon it. Id.; Bosshard, supra note 25, at 14, Western investors eagerly embraced this model, which allowed them to evade stricter social and environmental regulations at home.

165. Conrad et al., supra note 11, at 15, 31. There have been increased exports by China’s rapidly growing solar water heater manufacturing sector, and there has been some interest in off-grid renewable energy uses in rural areas.

166. Conrad et al., supra note 11, at 15.

167. Id. at 31. Patey & Pedersen, supra note 160.

168. Conrad et al., supra note 11, at 32-33.

169. For instance, China Suntech Power Holding signed a Memorandum of Understanding with UmsimbiShi Holdings to jointly seek opportunities to develop solar power in South Africa; Suntech also confirmed plans to build a 100-MW solar power plant. Id. at 40.

170. Id. at 30.

171. WORLD WILDLIFE FUND, supra note 111, at 15.

172. The cement-clinker automatic production line introduced by China during the 2010-2011 expansion of the Twiga Cement Factory in Tanzania provides pollution-free production with low-energy consumption.

173. Sino-Tanz Renewable Energy Ltd. of Tanzania, MCC 20-Hainan International (China), and Norsk Vind Energy (Norway) constructed a 100 MW power generator in Tanzania.

174. Conrad et al., supra note 11, at 76.

175. Id.

176. Id. at 40.

177. Id.

178. The project is led by the China Petroleum and Technology Development Company—a China National Petroleum Corporation subsidiary—the Tanzania Petroleum Development Corporation, and Siemens, and is scheduled to be completed by December 2012. Id.

179. WORLD WILDLIFE FUND, supra note 111 at 13.

solar products to harness solar energy. This joint research project is focused on finding ways to adapt solar panels designed for China’s topography to Kenyan conditions. Partners include an electronic technology company from Kenya and the Natural Energy Resource Research Institute based in Gansu, China. The Chinese government has already approved the joint research program, allocating $386,000 for the project. Once completed in 2012, it will fuel schools, homes, health facilities, and tourism destinations. Kenya depends largely on hydropower and imported oil to generate electricity, but if this project is successful, it will be able to exploit the vast amounts of available solar energy and bring power to a large rural population that is still dependent on wood and coal for cooking and heating.

3. One Hundred Clean Energy Projects

At FOCAC IV, held in November of 2009 at Sharm el-Sheikh, Egypt, Premier Wen Jiabao announced that China would construct 100 clean energy projects across the African continent. While large hydropower projects have generally been financed by resource-backed loans that are tied to China’s efforts to secure its energy and natural resource needs, the clean energy pledge signals a fresh and fundamentally different pattern of Chinese engagement that encompasses direct investment in wind, solar, biogas, and small hydropower. It excludes large hydropower; is driven by green technology development and manufacturing, which are also part of China’s long-term economic policy planning; and indicates an expansion of China’s approach to expanding renewable energy beyond large hydropower.

Following FOCAC IV, China began to implement a wide variety of Conference undertakings, including the 100 clean energy projects initiative. At the October 28, 2011, China-Africa Think Tank Forum, a representative of the Chinese Ministry of Foreign Affairs disclosed that China has worked out country-specific plans for setting up projects in 11 SSA countries, as it attempts to provide clean energy that is based on its own experience with clean technologies. China is expanding its engagement in solar and wind power stations, and although it has yet to be fully implemented, biogas, solar, and small hydro are also on the drawing boards and commitments have already been made. Given China’s efforts to reduce domestic poverty on a monumental scale and bring energy to hundreds of millions in impoverished rural areas, this is a decidedly constructive development and may represent South-South cooperation at its very best. A nation in the midst of modernization is taking what has worked, albeit with appropriate modifications, to other countries with many of the same problems, and that is also attempting to undergo the same transition. These methods are much more likely to be effective as they are strategies undertaken in partnership with a nation that has recently and successfully utilized them. This is in marked contrast to the various theories propounded, perhaps with the best of intentions, by institutions dominated by nations that are long past these struggles.

IV. Conclusion

Although China’s role in Africa is often criticized by Western commentators, I believe this is a very good story for Africa and perhaps for the rest of the world. While there have indeed been problems, both environmental and otherwise, and there are bound to be more glitches and stumbles, China’s engagement with SSA may truly mark a new beginning for the region. The relationship is wide-ranging and deep and marks a new turn for South-South cooperation that is not among equals, but is surely more equal than the almost neocolonial role that has evolved to govern the relationship between the nations of SSA and IFIs, such as the World Bank and the IMF. There is at least a semblance of respect and mutual benefit in the FOCAC, and it is much more likely than not that African governments will increasingly turn to their new partner. This, in turn, is likely to elicit changes in the conventional modalities of these institutions. Perhaps, this is for the best, as China is itself in the midst of modernization and is better suited to help African nations discern the appropriate modalities for African modernization. China may also

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182. Id.
183. The eight-point plan focused on improving the living standards of the African people and covered agriculture, environmental protection, investment promotion, debt reduction and cancellation, wider market access, education, and medical care and public health. China-Africa Trade, supra note 180.
184. Conrad et al., supra note 11, at 7. World Wildlife Fund, supra note 111, at 10. Conrad et al., supra note 11, at 7. The eight-point plan focuses on small-scale energy projects in Africa’s infant renewable sector differs from China’s customary role with its focus on major infrastructure projects, such as railways, highways, or bridges. It also differs from the previous pattern of China’s engagement in the renewable power sector, which has emphasized constructing large hydropower plants. China is also helping South Africa, which is the major emitter of GHGs on the sub-Saharan continent, transition from coal to cleaner technologies.
185. Conrad et al., supra note 11, at 7.
186. World Wildlife Fund, supra note 111, at 17. This included initiating the China-Africa Science and Technology Partnership Plan as well as the China-Africa Joint Research and Exchange Plan. China also signed framework agreements on concessional loans with some countries, and exchange of letters with a majority of the least developed countries on increasing the number of items that receive zero-tariff treatment. It also agreed to send some countries agricultural technology teams, and to provide medical equipment and anti-malaria medicine. China began constructing agricultural technology demonstration centers, 50 China-Africa friendship schools, small-sized well digging projects for water supply, and made progress on providing human resources training for Africa. In addition, China kicked off “African Culture in Focus 2010” activities, officially launched the 20-20 Cooperation Plan for Chinese and African Institutions of Higher Education, and held the China-Africa Modern Agriculture Cooperation Forum in Beijing.
188. Patey & Pedersen, supra note 160.
189. Mello & Xie, supra note 45, at 10.
190. The Angola model stems from China’s experience with Japan, where it was on the receiving end of modern technologies and supplier of natural re-
be in the best position to alter the development policies of IFIs, if only because Chinese strategies are more effective. Indeed, it is difficult to perceive why the Angola model is not an improvement on more traditional FDI, when it has resulted in the construction of desperately sought infrastructure to the benefit of millions across the continent. If these policies succeed, and are desired by African governments and populations, it makes little sense not to adopt them across the board.

Matters on the environmental front are mixed, but I believe they are more positive than not. China is extracting fossil fuels whose use will undoubtedly lead to more GHG emissions and thus contribute to global warming. Yet, it is almost certain that this would have transpired with or without China, as it is very likely these resources would have been extracted in any case. Thus, while this is a negative, perhaps it is not distinctly Chinese. There have also been other environmental missteps, which is not surprising given the environmental record of public and private Chinese corporations at home and now unfortunately abroad. But it has led to a different kind of accommodation, as both China and African countries eschew international standards and work out strategies between themselves. This may signal a maturing of African governments, something Western commentators would be slow to recognize, much less encourage or nurture, but something China seems to be encouraging and assisting and that may be taking place nonetheless. Moreover, as China attempts to correct its domestic environmental missteps, it will also be more likely to incorporate these standards into its “going out” strategy. If nations do not believe they will lose FDI by insisting on environmental protection, they are unlikely to resist cleaner projects in favor of polluting ones, and Chinese SOEs can deliver on this.

On the constructive side, China is exporting green energy technologies, and SSA is greatly in need of energy. This has the potential to be a perfect marriage and an example of something that has been quite elusive: sustainable development, or at least more sustainable development. If the peoples of Africa are to possess the benefits and burdens of modern life, they will need energy, and if China is willing and able to bring that capability to the continent in the form of renewable energy, this is a win for China and its corporations, for African nations and their firms, and for the international community as a whole. It means that development, something we purportedly have been assisting the peoples of SSA with for the last 60 years, may actually materialize in some form, and it will be without more of the GHG emissions that are destroying our planet. The signs of this transformation are already there, and it is why Africa is clearly progressing.

Of course, this is the most optimistic scenario. If could be that China will abandon its efforts in SSA, will revert to failed development policies, or that the ravages of climate change will be too severe to overcome with the assistance of just one power, even one as rich as China. But even in the event of this unlikely scenario, there are other Southern Tier countries on the horizon, and South-South cooperation in its entirety is unlikely to disappear. In any case, we in the West—and especially in the environmentally conscious and concerned West—should applaud these efforts and add our voices to discerning techniques that might make renewables more sustainable, for example, best practices regarding dams and innovations and experiences in bringing power to rural communities. But even as we add our voices, perhaps we can take a cue from the Chinese and approach this emerging discourse as peers to the parties already at the table, rather than as experts who are there to speak but never to listen, and to better appreciate that there may be different priorities and solutions to the daunting problems facing poor nations. Without a bit more deference, I fear we, meaning those who care about the environment and the poor, will no longer be useful parts of the conversation, just when there is finally a bit of good news, for it seems Africa is indeed developing and on a more sustainable course than we could have ever predicted. In this author’s opinion, this is exceptionally good news.

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sources. It believes this exchange was ultimately beneficial. See also Brautigam, supra note 2, at 12.