

Climate Finance, Africa and China's Role

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Abstract

Financing is one of the most key issues for global climate co-operation. Climate finance as an increasing part of development issues is particularly relevant to Africa as the least developed continent which is most vulnerable to the impact of global climate change. Africa needs sufficient financing to secure a low carbon and sustainable development path as well as adapting to potential damages of climate change. The reality is far from satisfactory, however, in the size, source and distribution of climate finance for Africa. China has become the second largest economy as well as the largest energy consumer and greenhouse gas emitter in the world. It is now a systematically important country in almost every aspect including in tackling climate change, in which Africa has great interest. However, China does not seem ready to lead the world in climate finance except leading by example. It is not willing to give up its position on the principle of common but differentiated responsibilities. It is increasing financial, institutional and intellectual contributions to multi-lateral institutions for climate action, but insists on South-South co-operation as complementary to traditional North-South co-operation (Ministry of Foreign Affairs, 2013).

The more flexible bi-lateral channel is expected to continue to be the main platform that China can contribute to Africa's climate finance through public assis-

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tance as well as trade and investment. China is the largest trade partner of Africa and one of the largest sources of foreign direct investment (FDI) for Africa. The China-Africa relationship has been evolving from a traditional political friendship to a modern style of comprehensive and strategic partnership. With its own domestic economic transformation, China can help promote more sustainable development in Africa.

Introduction

Theoretically speaking, climate finance includes all resources, public and private, provided for mitigation and adaption to climate change in both developed and developing countries. Politically, however, the focus is on the climate finance flowing from the “North” to the “South”. This is a reflection of the principle of common but differentiated responsibilities (CBDR), the cornerstone of United Nations Framework Convention on Climate Change (UNFCCC). It is an issue of both efficiency and equity. For efficiency, climate finance flows from north to south can make mitigation occur at places that cost the least. But equity is a more important issue. Developing countries contribute little to but suffer much from historical emissions of others. Climate finance is widely advocated as “entitlement” instead of “aid” (WRI, 2010:21). Major issues concerned could be sketched from the demand and supply sides respectively.

This article is divided into three parts. Part one describes the general theories of climate finance as a context. Part two focuses on the main challenges Africa faces on this issue from the perspectives of demand, supply and Africa’s own capacities. Finally, part three explores different approaches that China can contribute to the solution and analyses relevant problems.

Climate Finance in General

Enormous need of climate finance

The demand for climate finance in developing countries is enormous, though esti-

mates differ greatly from US\$ 265 billion to US\$ 565 billion for mitigation and US\$ 30 billion to US\$ 100 billion dollars for adaptation per year under a two degree Celsius scenario (World Bank, 2010:257). With regard to the current size of annual climate finance, there is no clear and recognised data. According to the estimate of Organisation for Economic Co-operation and Development (OECD), the total amount of North-South climate finance stands at US\$ 70 billion to US\$ 120 billion per year during for the period 2009 to 2010, including private investment, (Table 1.2) while the total official development assistance (ODA) by OECD Development Assistance Committee (DAC) at its peak in 2011 stands at less than US\$ 150 billion. In the Copenhagen Accord in 2009, developed countries made collective pledges to provide “new and additional” US\$ 30 billion of fast start finance for 2010 to 2012 and US\$ 100 billion annually by 2020. A new mechanism, Green Climate Fund (GCF), was proposed in Cancun in 2010 and accepted in Durban in 2011 to mobilise a certain share of the above pledges. The major purpose is to mobilise more diversified resources.

Supply side: a sketch of climate finance architecture

The overall landscape of climate finance that developing countries receive is very complicated (Atteridge, Siebert, Klein, Butler & Tella, 2009:4). Public and private sources are channelled through many different and overlapping agencies and systems. From the top-down perspective, they can be simplified as a competitive parallel structure: UNFCCC climate system and the traditional development system, including multi-lateral and bi-lateral. (Table 1.1) According to the UNFCCC, developed countries are obliged to provide “new and additional (N&A)” financial resources for developing countries to meet the costs of preventing and adapting to climate change. The baseline for judging N&A is the traditional ODA, which reflects the dissatisfaction of developing countries on traditional ODA system and their intention to separate climate finance from traditional development finance. The separation efforts largely succeeded in institutions. The financial mechanisms under the UNFCCC, from Global Environment Facility (GEF) to the Adaptation Fund and the recently established GCF, initiated a lot of reforms and innovations

Table 1.1 Climate finance and ODA

Donor-driven \longrightarrow Recipient-driven

vertical horizontal	Bi-lateral ODA	Multi-lateral ODA	Financial mechanisms under UNFCCC	National funds
ODA in general	Total bi-lateral climate change-related aid by OECD-DAC members reached US\$ 21.2 billion per year in 2010 to 2011, representing 16 per cent of total official development assistance (OECD DAC Statistics, updated November 2013)			
Climate funds (mitigation and adaptation)	Fast Start Finance (Japan) International Climate Initiative (Germany) International Climate Fund(UK)	Global Climate Change Alliance (EU)	Global Environment Facility Green Climate Fund	Indonesia Climate Change Trust Fund Bangladesh Climate Change Resilience Fund
Mitigation funds	International Climate and Forest Initiative (Norway) International Forest Carbon Initiative (Australia)	Climate Investment Fund (World Bank, including Clean Technology Fund and Strategic Climate Fund) UN-REDD Program (UNDP) Global Energy Efficiency and Renewable Energy Fund (EU)		Amazon Fund
Adaptation funds		Pilot Program for Climate Resilience (World Bank) Global Fund	Least Developed Countries Fund Special Climate Change Fund Adaptation Fund Strategic Priority on Adaptation	

Source: edited on materials from <http://www.climatefundsupdate.org/listing> and others. There are overlaps among different sources

in governance structure to give more representation and voice to developing countries (Horstmann & Abeysinghe, 2011; Ballesteros, Nakhooda, Werksman & Hurlburt, 2010:12). It is fair to say that they are pioneers of the whole global economic governance reforms.

It is however technically very difficult, if not impossible, to completely separate climate finance from ODA in sources. Especially where adaptation is a continuum of activities, from those directly responding to the impacts of climate change, such as building a sea wall, to those addressing the underlying drivers of vulnerability, such as education and health, the latter of which is the core of traditional development finance (Persson *et al*, 2009:15-16). UNFCCC actually takes a pragmatic approach and does not exclude other channels, including bi-lateral and multi-lateral development agencies, for developed countries to deliver climate finance [“The developed country parties may also provide financial resources related to the implementation of the Convention through bi-lateral, regional and other multi-lateral channels” (UNFCCC, Article 11.5)].

Many developed countries prefer to channel their climate finance through multi-lateral and bi-lateral development agencies as they can keep more controls on the usage of resources. Despite the intensive reforms under the UNFCCC financial mechanisms, more climate finance resources are actually channelled through bi-lateral and multi-lateral development systems. A notable example is that the Climate Investment Fund (CIF) initiated by the G8 Hokkaido Summit in 2008 administered by the World Bank has pledged more than US\$ 6 billion, which is larger than the total size of all UNFCCC financial mechanisms. The author believes that with the competition and interaction of the development system and the climate system, the evolving definition of climate finance under the UNFCCC framework is going to seek more integration with, rather than separation from, the development system. The underlining economic situation and the decline of total ODA will bring even more pressure for the two systems to join.

Despite the fact that public climate finance is high on the agenda, private sector investment and carbon marketing from the bottom up is by far the major source of

climate finance (Table 1.2). Some of them are directly leveraged by public policies and resources, such as Clean Development Mechanism (CDM) carbon offset markets, while others are more or less venture capital. Similarly it is very difficult to differentiate between the two, but it is certain that the private sector is increasingly important for climate finance. As a seasoned practitioner from the World Bank said, "a critical goal of the design of any climate finance architecture will be to ensure that scarce public funds are used to leverage and mobilise private finance" (De Nevers, 2011:3).

Table 1.2. Estimates of North-South Climate Finance Flows

Type	Amount
Public Bi-lateral	US\$ 15-23 billion
Public Multi-lateral	US\$ 14-17 billion
Export Credit	US\$ 0.7 billion
Climate Funds	US\$ 1-3 billion
CDM Primary Transaction	US\$ 2.2-2.3 billion
Private Philanthropy	US\$ 0.4 billion
Private Investment	US\$ 37-72 billion
Total Amount	US\$ 70-120 billion

Source: OECD, Financing Climate Change Action, 5 April 2012

Private and innovative financing is very hotly discussed but very controversial under the current global climate negotiation as a way to narrow the gaps of climate financing needs. While the developed countries are seeking to "privatise" the problem, developing countries including Africa advocate that the annual climate finance of US\$ 100 billion committed by developed countries should be from purely public source. Equity is the basic consideration. They strongly argue that developed countries should not evade their responsibilities by privatising prob-

lems. This is not a real issue, however, as private and innovative resources still depend on the leverage of public policies or resources, in which developed countries must play a leading role. Considering the current world economic situation and the efficiency, it is more problematic how private investment could be encouraged rather than whether they are needed. In fact, private sources will not only fill the gap of needs but also increase stability of climate finance.

The other concern is more reasonable: bias of private resources. Private investment is mostly feasible for mitigation activities, while adaptation depends heavily on ODA and grants. This will harm the interests of the most vulnerable countries and populations, including Africa. There must be co-ordinated measures, such as setting quotas, to make sure the adaptation needs of the most vulnerable are satisfied.

Climate Finance Challenges for Africa

Africa's demand for climate finance

Climate change augmented and complicated the challenges for African sustainable development. Africa accounts for 14 per cent of the world population, but contributes only less than four per cent of global greenhouse gas emissions, the least of all regions. However, Africa is most vulnerable to climate change because of poverty (instead of geographic conditions). It is predicted that by 2080 land with severe climate or soil constraints in sub-Saharan Africa (SSA) will increase by 26 million to 61 million hectares, which is nine to 20 percent of the region's arable land (World Bank, 2010:146). Therefore, serious finance is needed for Africa to adapt to climate change and adapt to a low-carbon development path. Again, estimates vary in different sources; one study, as an example, shows that for the period between present and 2030, Africa requires between US\$ 510 billion and US\$ 675 billion for low-carbon development (UNECA, 2011:32).

International supply for Africa

Due to the lack of comprehensive data, it is not clear how much Africa has received from the northern countries for responding to climate change. But there are

increasing efforts on tracking climate finance and Africa is the natural focus. Several general trends can be identified.

Firstly, the total supply is far from enough for Africa. According to the Climate Funds Update, which monitors close to 30 dedicated multi-lateral and bi-lateral climate funds, a total of US\$ 1.73 billion has been approved for 381 projects and programs throughout the region of sub-Saharan Africa, of which US\$ 586 million has been disbursed between 2003 and 2013. (Nakhouda *et al*, 2013). These statistics are incomplete, but this does not affect the fact that the current supply is only negligible compared to the demand. The same source shows 15 multi-lateral funds are active in the region. The UNFCCC funds are the major sources for SSA, while the World Bank and African Development Bank also play important roles. Individually, the World Bank's Clean Technology Fund (CTF) is the largest single source that has approved a total of US\$ 401 million for five projects. Bi-laterally Germany, the United Kingdom and Norway are among the most active players.

Secondly, the two-level inequality in allocation of resources globally and within Africa has attracted more attention. As Confucius famously said, inequality rather than want is the cause of trouble. At the global level, Africa is generally thought to be marginalised as the climate finance mechanisms have shown a strong bias toward mitigation. It is estimated that the ratio for the amount of financial resources used in mitigation versus adaptation in developing countries is about ten to one (Parker *et al*, 2009:24). Mitigation finance favours big projects in industrial and energy fields in those emerging economies while Africa does not have advantages on them. Africa, SSA especially, is still an under-developed low-carbon society and therefore does not have many mitigation projects. Hydro power is the largest source of electricity generation across SSA. The experience of CDM under the Kyoto Protocol of the UNFCCC has been widely quoted as the example of how Africa has been discriminated against. Africa occupies only about two per cent of CDM projects officially registered (World Bank, 2010:40). The issue of allocative inequality within Africa is also widely noted. So far the Egyptian fertiliser factory, Abu Qir, located on the north coast of Egypt generates more carbon offset credits than the rest of the continent combined, while South Africa has the largest number

of registered projects (19). The rest of SSA hosts just 31 projects, amounting to 0.9 per cent of the total projects globally and just 0.005 per cent of credits issued to date (ISS, 2011). Take CTF administered by the World Bank as another example; South Africa received nearly half of the total US\$ 924 million, while the rest went to Morocco and Egypt (Brown *et al*, 2010:10).

This two-level inequality for Africa is not expected to change much in the near future. Some initiatives are thought to be in great favour of Africa's land use sector, for example, to expand CDM to cover carbon storage in the soil integration. However, there is critical view that this will only benefit agribusiness instead of small farmers. What's more, other initiatives will definitely further harm the interest of SSA countries in the carbon offset market, such as the plan to include Carbon Capture and Storage (CCS) in the CDM. It is predicted that by 2020 Africa would get less than four per cent of CDM credits, though Nigeria could replace Egypt to be the largest beneficiary (ISS, 2011).

But not all are negative news. Adaptation has been gaining attention since late 1990s. Between 2004 and 2011, US\$ 328 million has been approved for 75 adaptation projects in Africa, while US\$ 132 billion has been disbursed to date, which represents about 30 per cent of finance disbursed for adaptation globally through dedicated climate financing instruments (Nakhooda *et al*, 2011). Some special funds favour Africa, such as the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF) under GEF.

There is still concern on the adaptation finance side in Africa. Owing to the obscure line between climate and traditional development finance, in the context of tightening budget limits and the huge finance gap between demand and supply, changing priorities of contributors in favour of climate resilience could benefit the water-related sectors and regions like the Middle-East, Asia and Latin America, but on the other hand reduce the proportion of development assistance resources sub-Saharan Africa countries will receive in health, education and so on (Brown, *et. al*. 2010). Fortunately, we hope to see improvement on this aspect as DAC is discussing "mainstreaming" climate considerations into all development activities

(Bird, 2013).

Lack of absorptive capacity of Africa

Many studies point to the lack of absorptive capacity within Africa as one factor, being as important as the shortages of international institutions, leading to Africa's disadvantage. As a recent study by the United Nations argues:

"While there are governance constraints at the global level, African countries need to work [...] towards stimulating effective domestic demand for climate adaptation and mitigation funds and improving the absorptive capacity of African countries to effectively deploy climate funds. African countries should also put in place appropriate legal and institutional frameworks that would attract private (international and local) finance into climate change activities" (Bird, 2013:10).

During 1980 to 2009, US\$ 1.22 trillion to US\$ 1.35 trillion illegally flowed out of Africa and 70 per cent of this total was from SSA (African Development Bank and Global Financial Integrity, 2013). This huge amount of money could have been used for Africa's own development much more effectively. As mentioned above, the UNFCCC is pioneering governance reform in climate finance mechanisms. One of the most significant achievements is the "Direct Access" to the Adaptation Fund and the new Green Climate Fund (Horstmann, *et al*, 2011; Ballesteros, *et al*, 2012:12). Africa is one of the active advocates and drivers of the reform, which shows the increasing influence of Africa in global climate and economic systems. There is reasonable concern that lack of institutional capacity domestically could be an obstacle for this new mechanism to be implemented.

The increasing fragmentation and complexity of international development and climate finance architecture is another factor that challenges the institutional capacity of African countries. On average, each recipient country needs to deal with 30 donor agencies, each with its own procedures (Adugna *et al*, 2009). In the first decade of the 21 century, the environment has become another area, following the health sector, where vertical funds proliferate, reflecting the rising concern on climate change (Castro *et al*, 2011). There are now several dozens of climate funds

already. This poses significant challenges for African countries to manage these different channels. It is difficult to get change the incentive for countries to set up new funds. Strengthening country-level co-ordination is what African countries need to consider, but this is a very profound issue. Institutional capacity and governance is actually only a small part of the whole story. Improving the investment environment and stimulating the demands is the more structural and difficult part.

China's Role

Bi-lateral development co-operation frameworks is and will remain major channels for China-Africa climate co-operation, nonetheless, external pressure and internal drive will lead China to embrace multilateralism more strongly, including multi-lateral development banks and the UNFCCC. What China can provide for Africa in climate finance is far beyond capital and include more equitable and fair governance structures and knowledge sharing.

Bi-lateral development framework

Assessment of the size of China's aid has been controversial due to the lack of common definition and methodologies. Western scholars' estimate that China's annual aid budget ranges between US\$ 1.5 billion and US\$ 25 billion, with the upper estimate ranking second only to US (Walz & Ramachandran, 2011). In fact however, much of this "aid" belongs to investments implemented by state-owned entities instead of "aid" as defined by OECD. According to China's official data, China's total aid to developing countries by the end of 2009 amounted to RMB Yuan 256 billion (US\$ 41 billion), RMB Yuan 170 billion (US\$ 27 billion) of which was provided in the last ten years (US\$ 2.7 billion) (State Council Information Office of the PRC, 2011).

It is not very clear how much of China's aid went to Africa. Bloomberg reported that China was to surpass the World Bank as the "top lender" to Africa by 3 November 2006. Chinese official data indicates nearly half of China's aid went to Africa in 2009 (State Council Information Office of the PRC, 2011). The China-Africa Development Fund ("CAD Fund") under China Development Bank, the

only Chinese fund specializing in investment in Africa launched on 26 June 2007, had delivered US\$ 1 billion by 2011 and is starting to deliver its 2nd term pledge of US\$ two billion, which all-together is expected to leverage more than US\$ 8 billion investment of Chinese enterprises in Africa and increase nearly US\$ 2 billion of local exports (China Development Bank, 2011:56).

It is even less clear how much exactly China has financed climate friendly activities in Africa. Compared to traditional donors, China is only a late-comer in providing special climate finance for Africa, but China's aid to Africa did cover renewable energy for a long period. In the 1980s, China transferred its biogas and small hydropower technology to many developing countries, including many African countries, through UN or bi-laterally means. China also provided training to many African countries in development and use of renewables such as bio-gas, solar power, small hydropower stations, as well as forestry management, and desertification treatment and prevention. In the future, China-Africa co-operation on renewable energy is expected to expand from bio-gas, small hydropower stations to solar and wind power.

Coping with climate change has been clearly declared as a new concern in China's foreign aid and Africa was the first targeted region (State Council Information Office of the PRC, 2011). Prime Minister Wen Jiabao declared 8 new measures to promote China-Africa co-operation at the 4th China-Africa Forum in Egypt on November 8, 2009, the first of which was to establish China-Africa Partnership in Coping with Climate Change, through which China pledged to establish 100 clean energy projects for Africa before 2012, though no accurate amount was given. This is set to leverage more Chinese investment into clean and renewable energy development in Africa, which would mean a shift away from the traditional focus on mining oil and gas. China also committed to invest US\$ 100 million in developing solar energy projects for 40 African countries, for example, installing solar panels on the roofs of schools and hospitals (Energy and Environment 能源与环境, 2012). This is expected to be mutually beneficial: improving Africa's energy sustainability and diversifying Chinese exports of solar panels.

China-Africa Climate Partnership is still at its earliest stage and a lot could be done in the future. It should continue to support mitigation activities like renewable and clean energy, since it is the competitive advantage of China. Clean coal co-operation should be given more attention considering the important role coal will continue to play in both China and Africa. On the other hand, China-Africa Climate Partnership could consider expanding co-operation to more comprehensive adaptation activities in the least developed areas. Furthermore, more co-ordination with other sources of climate or development funds at the country level is also one issue that needs to be considered.

Multi-lateral frameworks: Development banks and UNFCCC

China should embrace more multilateralism in dealing with Africa for sustainable development as multilateralism usually represents more transparency, norms and legitimacy that are critical to calm down western criticism about China's presence in Africa. Both multi-lateral development banks and the UNFCCC belong to multilateralism, but they differ from each other in values, institutions and policies as analysed in session one. However, the role that China can play in increasing Africa's interests in these two platforms is similar. There are at least two important dimensions: sources and governance.

Firstly, China could increase the supply of the global public resource pool, but it will take some time before systematic issues are solved. Changing capacity of China in the world development system not only raises the level of the global public resource pool but also reduces the demand for competition Africa faces. In the World Bank, China is upgrading itself from a pure recipient to a new contributor to the International Development Association (IDA). China committed to donate US\$ 300 million in cash in the recently finished 17th replenishment of IDA, doubling from the last round. The total amount of this replenishment has been announced to be US\$ 52 billion, while the detailed composition of donors is to be published in April 2014 because of the needs of internal approval. This will be an important way that China contributes to Africa's climate change action through multi-lateral channels. There are two reasons: firstly, IDA is going to focus on

Africa as many low-income countries in Asia and Latin America upgrade into middle-income countries (Bosco, 2012). Secondly, donors are calling for IDA to increase attention on climate change in its future activities so as to promote more sustainable development (World Bank, 2013). “This IDA replenishment will see an increased focus on the most challenging frontier areas, greater private sector mobilization, and stronger, more targeted investments in climate change and gender equality, as key to shaping the future. A strong commitment to more equitable growth underpins these efforts” (World Bank, 2013).

In the emerging GCF system under the UNFCCC, though as a developing country, China clearly declared giving up claims on it at Copenhagen in 2009. Actually there is high expectation that China should contribute resources to it. However, China is willing but very hesitant to donate to GCF, as it is concerned that this will be understood as giving up its position as a developing country. For China, maintaining the principle of CBDR is the top priority in global climate negotiations. Therefore, a clearer and “just” definition of CBDR will be necessary to persuade China to play a more constructive role in GCF. In addition, China could urge the developed countries to divide their collective pledge at Copenhagen, that is, an annual US\$ 100 billion of climate finance by 2020, integrate them into the future measure, report and verification (MRV) system. If this can be done, it would mean the legalisation of climate aid obligations and a breakthrough compared to the traditional development system based on declaratory documents only without legal forces, for example, the Millennium Development Goal (MDG) pledges.

Secondly but not least, China could help protect African interests by enhancing the diversity of the governance structures in the development and climate finance institutions. In the global economic system, China still belongs to the disadvantaged side and is seeking improvement, if not “revolution”, of it these institutions. However, global power shift is indeed unfolding from the bottom market level to the governance level. The governance issue has two dimensions: formal and informal power structure. Actually, under the background that almost all major international economic organizations are seeing a power shift from advanced to emerging and developing countries in formal organizational structures, development and climate

finance mechanisms are pioneers in this trend. GEF realised parity of voting rights between developed and developing countries 20 years ago while more recently GCF was again declared a victory of developing countries. The concept of “new world order” is reviving. Similarly Africa is gaining more representation and guarantee in various global economic, development and climate governance structures like the IMF, World Bank, GCF and G20.

However, there is an informal dimension of the source of power based on capital contributions under the control of domestic authorities. The most prominent cases are IDA and GEF, in which the United States Congress effectively imposed conditions on the operation of the funds through its approving power in the replenishment process and invalidated the formal governance structure. This has been widely criticised and must be solved in the future. Diversity is the solution and can be done by firstly looking at the public resource side. Emerging economies like China could provide new official sources for GCF in the long run, reduce the dominance of the largest shareholders and increase the predictability of the funds. China could also promote independence of the funds from domestic authorities.

For its own interest as a developing country, China has real incentives to safeguard the interests of African countries when participating in global economic and climate governance. In GCF, a lot could be done for Africa by China. The first step is still to urge the MRV for the collective pledge of developed countries on climate finance. The second step is to relieve the negative effects of private involvement, which is to say China could support setting quotas for African countries, especially the least developed ones, for adaptation activities in the allocation and use of funds. Thirdly, China could bring different thoughts on how the money should be used. China, India, Brazil and other developing country members played a high-profile role in helping South Africa win the approval of the World Bank Executive Board for the Eskom program, but this is very controversial and involves how to balance climate and development, short and long term interests.

BRICS is becoming a new forum for China-South Africa co-operation and energy is now a new focus. The proposed BRICS Development Bank is targeted at the

South-South co-operation beyond BRICS and is worth more exploration (BRICS, 2012).

Trade and investment

In the last couple of years, China has played a very important role in promoting private investment in climate funding. This is a very positive development since private investment rather than ODA is the most important assets for Africa. Actually it is fair to argue that China has a more important role to play further here rather than providing official climate aid. Through its firm determination and strong policy measures to promote energy transformation, China is leading the global renewable energy investments. This has spill over effects and indirectly encourages similar investment in Africa. According to BNEF, with nearly US\$ 50 billion invested in 2010, China was by far the largest source of, and destination for, clean energy investment globally. Very notably Africa has become the new highlight in renewable energy investment. It registered a five-fold increase to US\$ 3.6 billion, the fastest of all developing regions, in renewable energy investment in 2010 (UNEP and Bloomberg New Energy Finance, 2011:13). The total size however, was still small compared to other regions. Investment is also concentrated in a limited number of countries such as Egypt and Kenya (UNEP and Bloomberg New Energy Finance, 2011:22).

China and Africa can also further their co-operation in pushing their domestic energy policy reforms. China plans to establish a national cap-and-trade system for greenhouse gases by the end of 12th Five Year Plan period (2011-15). It is not excluded that the system could develop well and accepts offsets from Africa in ten years or so, similar to what Europe's Emission Trading System has done.

However, it is not time to say that this investment will be a sustainable one. There is serious concern as to whether this momentum can be sustained in China, Africa and the world. The boom of shale gas and other unconventional oil and gas exploration in America could reverse this trend in global renewable energy investment trends and increase difficulties of mobilising resources for climate. The unexpected success of shale gas development in the United States of America has been

encouraging major energy consumers in Europe and Asia to explore their own opportunities. IEA says natural gas will increase its share of the global energy mix at an annual rate of 2.4 per cent between 2012 and 2018, which is slower than previously projected but still a sign of a “Golden Age” (IEA, 2013). This could reduce CO₂ emissions by promoting substitution of gas for coal in electricity generation but, on the other hand, would also slow down the process of introducing renewable energy.

Future trends

Previous sessions indicate that China is not a major and active player in providing climate finance for other developing countries both globally and in Africa. However, this situation is gradually changing. Two major factors are working together in favour of an increasing role of China in this area.

First and foremost is the dynamics of global climate negotiations. The current global climate architecture, UNFCCC and its Kyoto Protocol, is primarily a set of rules based on the principle of CBDR between developed and developing countries, in which the former is obliged to provide financial support for the later. China and Africa belong to the same group of developing countries. Therefore, China is not morally or legally obliged to provide climate finance for Africa and other developing countries. However, this single dichotomy is thought to not be applicable any longer as developing countries are being divided into different echelons. Those so-called emerging powers represented by BRICS are thought to have larger capacities than other developing and poorer countries. The more fundamental and structural change is that the emerging powers are also emerging emission powers and could replace the so-called developed countries to be the major sources of greenhouse emissions in future. To some extent, their emissions rise even faster than their contribution to global GDP. The post-2012 climate system should be based on both the level of emissions and capacities. After a hard bargaining process, the CBDR principle, if not (fortunately) disappearing, is set to be redefined as against the interests of emerging powers. Considering its total size, China will be the first candidate to change from the “Right” side to the “Obligation” side,

though it is still a relatively poor country in terms of per capita GDP compared to many other developing countries (poorer than South Africa and 2nd poorest in BRICS).

Second is the evolution of China's development and foreign policy. If the first point stresses the external pressure China faces, this point looks at its internal incentives in a broader sense in the development and foreign policy that work in favour of Africa. As mentioned above, climate finance is fundamentally a development issue though it seeks to break away from ODA system. China's changing role in providing climate finance for Africa must be understood in the evolution of China's development policy and the overall framework of development co-operation between China and the African continent. Ideologically and historically, China is not willing to be seen as an "emerging donor", as it used to be colonised by western countries. Politically, China considers the global development system as an unfair and inequitable one. Economically, China realises the development challenges it still faces domestically and prefers to define its relationship with Africa as mutually beneficial economic integration and South-South co-operation instead of providing aid.

However, as a big emerging economy, China has to think and behave more globally, earlier than others, before it becomes a fully-fledged developed state. Facing the increasingly fierce strategic competition from traditional powers as well as other emerging economies, China has real incentives to do more for the interests of Africa. The underlining fundamental rule is that a multi-polar world is better for Africa. Chinese development policy could become more like a traditional donor, such as providing more grants instead of loans. On the other hand, global governance systems are being reformed to be more representative, such as in the G20 and the World Bank, which also gives more incentives for China to engage more with the global system. China should also seek more prevention and protection through engaging in more multilateralism in its foreign policy, which is in the interest of Africa and the global system.

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