



**CENTRE FOR  
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## FOCAC: Addressing joint environmental challenges?

**Cooperation on environmental challenges has been an instrumental part of the first Forum on China-Africa Cooperation (FOCAC) since its inception in 2000. With increasing levels of economic interactions and political cooperation, environmental concerns have become increasingly important. This policy brief examines the state of environmental cooperation in FOCAC in the light of emerging challenges. It specifically explores issues related to biodiversity, the challenge of combatting desertification and the need to address water scarcity in both China and Africa. All three of these issues are having adverse effects on development prospects, not least on food security. A cross-cutting dimension to consider for the discussion of future challenges is the effect of climate change. From the assessment of common or different challenges, this briefing makes suggestions for future topics in China-Africa relations.**

Land for food production and water are essential for human life. Africa has a growing population which has the highest vulnerability to climate change in the world; China is presently still self-sustaining in food production. Food production faces ever growing challenges from urbanization and changing food patterns linked to increasing development, rapid economic growth and a growing population whose food security might be jeopardized by climate change. These factors are already drivers for Chinese investments in agriculture abroad.

Both China and Africa have an interest in adaptation and mitigation strategies to plan for the possible risks in future climate change projections, especially in terms of desertification and water scarcity. The same factors can also often lead to biodiversity loss.

### **Biodiversity**

Biodiversity increases the health of ecosystems and contains future possible advances in science. The Millennium Development Goal (MDG) target to slow the decline of biodiversity by 2010 was missed worldwide, as a UNEP progress report has shown. Nearly 17,000 plant and animal species are currently at risk of extinction, and the number has grown at a phenomenal rate. Biodiversity has been seriously damaged as a result of economic development and rapid human population growth. The main causes of biodiversity loss are: high rates of consumption, habitat loss, invasive species, pollution and climate change. In China and Africa, regions with some of the richest fauna and flora in the world, biodiversity has further declined, owing to much of these causes. It is thus

a necessity for China and African states to find areas of cooperation for the conservation of their ecological resources.

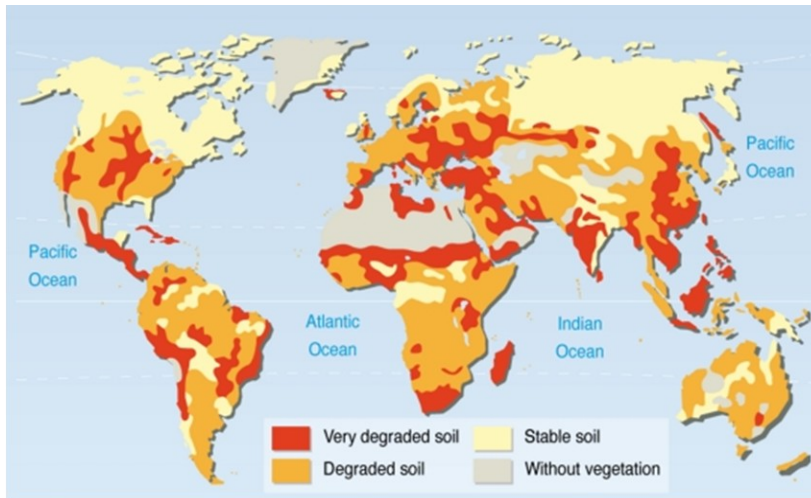
### ***Biodiversity challenges for China***

China is one of the world's biologically most diverse countries. Due to the rapid industrial development of China in recent decades, the loss of biodiversity is ever more pressing. China loses about 15 to 20 per cent of its species every year, as compared to a global rate of loss of 10 per cent. Industrialisation, (including some agriculture sectors), further urbanisation, increasing consumption levels, accelerated extraction of minerals and ores, and growing transportation have resulted in increases in resource use and higher pollution levels, causing further harm to biodiversity.

The rapid rise in urbanisation entails tremendous challenges: people need housing, infrastructure, water, food and jobs. Pollution and social inequality issues are on the rise. More than half the Chinese population, 690 million people, now live in cities. In 1980, less than 20 per cent of the Chinese population lived in cities. By 2030, this number will rise to 75 per cent. The building of infrastructure and the expansion of urban spaces has already led to massive loss of natural habitats.

Poor management and regulation of protected areas have led to further loss of biodiversity in China. Although the country has over 2000 nature reserves, many of them are more focused on recreational activities and tourism, rather than the protection of ecological resources. China has begun to create national parks, which according to international standards are firstly meant for environmental protection, and secondly, for

**Map 1: World map of soil degradation**



Source: United Nations Environmental Programme

education and recreation. However, the implementation has been slow, constrained by the lack of national regulation.

Although there has been an increase in environmental NGOs, and civil society protesting against pollution, environmental awareness amongst the public is still lacking. From an African perspective, a specific challenge persists not least with illegal wildlife trade in China: endangered species have been poached for traditional medicine, particularly the African rhino.

#### ***Biodiversity challenges for Africa***

The African continent is well endowed with biodiversity, much of it in a comparatively better state than many other parts of the world. This, however, has been rapidly changing in the last decades with major human population growth, economic growth and changing climates on the continent. According to UNEP, approximately half of Africa's terrestrial eco-regions have lost more than 50 per cent of their area to cultivation, degradation and/or urbanisation.

Biological resources are fundamental to human well-being. Agriculture, livestock, logging, and fisheries account for most subsistence survival, employment, and economic output. With a loss in biodiversity, few alternative species for crop growth or husbandry are available in the event of declining productivity due to environmental degradation.

Much of the focus of African states is directed towards poverty alleviation and development – often at the expense of longer term sustainability. Changing land use includes the production of biofuels and the intensification of agriculture and mining.

Africa has over 2 million km<sup>2</sup> of protected areas. Yet, of the 119 eco-regions, 89 have less than the 10 per cent of their area officially protected, which is the minimum guideline suggested by the 2010 biodiversity targets of the Convention on Biological Diversity (CBD). Biodiversity targets were not met, as they had not been sufficiently integrated into the strategies of broader sectors, such as agriculture, fisheries

and tourism. Also, some governments attributed the failure to achieve the biodiversity target to shortcomings in outreach, illustrating the need for improving environmental awareness across society. Furthermore, the funds needed to address climate change have overshadowed all other environmental concerns, including 'classical' conservation.

#### ***Biodiversity as a topic in FOCAC***

In the past, FOCAC action plans have included: the maintenance of biodiversity; the development of environmental protection industry; and the commitment of China helping African countries to better protect ecosystems and biodiversity. Specific actions were limited, though.

#### **Desertification**

Desertification is the degradation of land in dry areas, leading to a loss of soil for crop production. With global climate change the risk of desertification has increased in both China and Africa (see map 1). At the same time, both China and Africa have increasingly a higher demand for food. Desertification in China and Africa is not only part of a natural process but is also exacerbated by human activity and ill-advised policies.

#### ***Desertification in China***

Climate change is projected to impact China severely. The Intergovernmental Panel on Climate Change (IPCC) states that China will experience a general warming trend; winter temperatures are expected to increase by 0.5-0.8 degrees Celsius. Extreme weather events are likely to increase and cause more droughts in northern and north-eastern China. More than a quarter of China's territory is desert and more than a third suffers from land degradation. Each year 3400 km<sup>2</sup> of land is lost to desertification according to the State Forestry Administration (SFA). Desertification leads to lakes and rivers drying up, causing increasing salinisation, thereby leaving the soil unfit for crop cultivation.

Whilst China is still producing 95 per cent of her own staple foods, desertification poses a risk to food security. China is home to 22 per cent of the world population, but only has 7 per cent of the world's arable land. Climate change is one of the drivers behind desertification in China, but human activities intensify the problem. Population increase and changing consumption patterns mean more food needs to be produced. This increased food production, in turn, has led to an increase in deforestation, contributing to desertification and thus ultimately further reducing available arable land.

Chinese policies have put economic growth above environmental protection, leading to severe environmental degradation. In Inner Mongolia the "privatisation" of grassland has led to fencing in of grasslands, causing overgrazing and degradation. Often, local governments do not sufficiently heed

environmental concerns; prospects of tax income through large scale farming and state targets can act as disincentives.

The Chinese government has launched a range of projects aimed at combating desertification and land degradation. The Three-North China Shelterbelt programme involves a vast forestation project of the arid north, thereby seeking to combat soil erosion, reduce water runoff, and reduce sandification. However, tree survival rates are low and mono-cropping is a problem. Other methods, such as planting grasses, would arguably be more successful at increasing biomass and ground cover. The Grain to Green project subsidises farmers for converting their croplands into forests and grasslands.

### ***Desertification in Africa***

Climate change will most likely cause a warming and drying trend in southern Africa according to the IPCC. Drought and changes in timing of rainfall are characteristic of southern Africa, but increased variability can cause extreme drought events such as the famine in Malawi in 2002. Climate change, desertification and land degradation can endanger millions of livelihoods. According to the World Bank, 40 per cent of the population in Botswana rely directly on livestock, while in Malawi 90 per cent of the population are rural dwellers, predominantly making use of rain fed agriculture.

The UN Millennium Project found that food production in the least developed countries in the world reduced by 10 per cent over two decades. The majority of these countries are in Africa. With heat and water stresses in Southern and North Africa increasing, reduced food production and an increasing population are leading to a worsening of malnourishment in Africa. Desertification also threatens the Sahel; areas close to the Sahara are at the greatest risk of desertification in the world. The (scarce) natural resources of soil, water and vegetation are overexploited. Sustainable land management practices are crucial, such as digging zai-pits, cultivating indigenous trees and allowing agricultural land to rest.

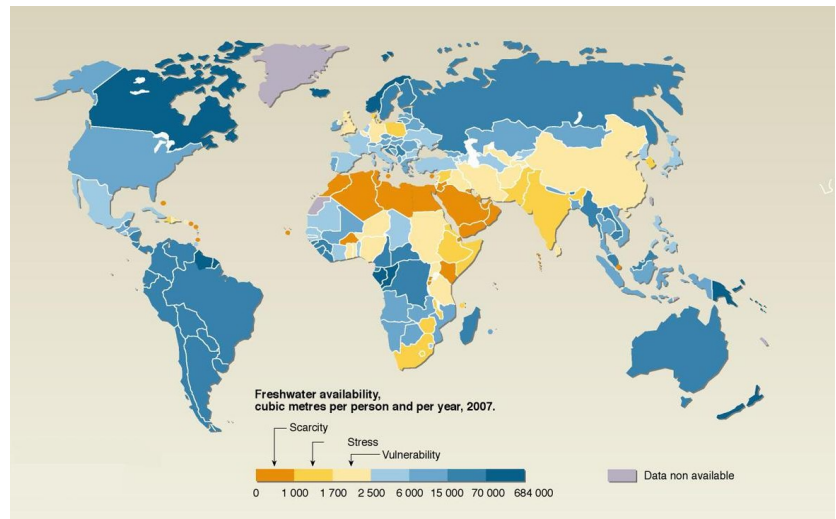
### ***Desertification as a topic in FOCAC***

In the FOCAC Sharm-el-Sheikh Action Plan (2010-2012), the importance of working against desertification and droughts is emphasised. China noted that it will "share experience with African countries in reducing drought risks". Action was limited, though. A co-sponsored seminar between China and the UN International Strategy for Disaster Reduction on China-Africa Drought Risk Reduction was held in Beijing in 2011.

### ***Water scarcity***

Water is essential for life—and it is often used as a vital component in manufacturing and mining. However water on the planet is not an infinite source; it can be over-exploited, both through pollution and ineffective usage. Climate change

**Map 2: World map of water stress**



Source: United Nations Department of Economic and Social Affairs

will bring changing rainfall patterns to China and Africa. These changing patterns will have effects with possible risks in all the affected areas.

### ***Water scarcity in China***

Overall, China is not a water scarce country; it has the fifth largest supply of freshwater in the world. Yet, China has only 25 per cent of the world average supply of water *per capita*. Northern China is classified as a water-stressed basin. At present, over 40 per cent of China's grain is being grown in the north. Even without the effects of climate change China is facing a water shortage in the long term. Overexploitation of rivers has left some areas downstream without water. Some rivers in the north have slowed so that they no longer reach the sea; this includes, at times, the Yellow river. Many Chinese especially in the north have turned to exploiting groundwater, which in turn has led to over-exploitation. China additionally has a pollution problem: 16 of the world's 20 most polluted rivers are in China. Some rivers polluted with fertilizer, sewage and animal waste have experienced algae blooms, causing oxygen levels in the water to drop below life sustaining levels.

Climate change intensifies the risk of increased water scarcity. Runoff from glaciers and melting snow in the Himalayas and Hindu Kush has been declining. In the province of Yunnan a drought in 2009/2010 left 18 per cent of the provinces population without adequate water supply according to the Chinese Ministry of Civil Affairs. In Yunnan, natural climate shifts were combined with environmental mismanagement. For instance, compared to 1976 levels, only 3.6 per cent of Yunnan's primary forest cover remained in 2003.

China nowadays invests more in water infrastructure, including large scale water movement projects, redirecting water from the south to the water scarce north and west. Water divergence projects, however, come with extremely high environmental and financial costs.



### **Water scarcity in Africa**

Climate change in Africa will lead to increased stress on water resources by changing the availability, accessibility and demand for water. Most climate change scenarios predict that most of Africa will get drier, whilst some areas such as east Africa is expected to get wetter (with more torrential rainfall in some regions). This will impact on agricultural production, as crops are generally adapted to their regions. In most cases reduced yields are expected. The IPCC also predicts that extreme weather events, including higher rainfall, will become more common, impacting also on conflict in Africa.

Increasing urbanisation in Africa – one of the least urbanised regions in the world – is adding to the problems. African cities are using too much water, polluting and contaminating groundwater, rivers and coasts. Water pollution is also severe in areas around oil works and other mining enterprises. Engineered approaches to solving water scarcity are not always the best option. Damming a river upstream can cause water stress downstream. Due to the scarcity of water, water efficiency needs to improve.

### **Water scarcity as a topic in FOCAC**

The FOCAC Beijing Action Plan (2007-2009) had only one direct reference to water, namely a pledge to step up cooperation in preventing and controlling water pollution, reiterating a previous phrasing. The FOCAC Sharm-el-Sheikh Action Plan (2010-2012) confirmed Chinese efforts for hosting training programmes in pollution prevention. China also pledged to build 100 small-sized well-digging projects in Africa. This will not be sufficient to adequately address the common challenge. Without sufficient water, Africa's agricultural potential will be substantially reduced. Specifically with regard to conflict potential, both African governments and the Chinese government should be concerned.

### **Conclusion**

FOCAC has witnessed increasing environmental cooperation since its inception in 2000. Nonetheless, new research on climate change and challenges such as increasing populations, the adverse effects of development and an ever increasing need for higher agriculture production both in China and Africa has created a need for stronger cooperation. Biodiversity protection, combating desertification and ensuring sustainable use of water supplies are essential for future economic growth. Biodiversity loss is predominantly caused by human activity in industry and agriculture, thus it requires adequate management. Both desertification and precipitation changes have the potential for causing weather disasters in China and in Africa, thus not only is the focus on these topics needed for the future but current risks should also be weighed in.

### **Recommendations**

During the next FOCAC meeting, previous plans and agendas, have to seriously be assessed when preparing the way forward for China-Africa relations. Positively speaking, common challenges are unique opportunities to strategically work together for sustainable development and future generations.

Systematically learning from regulation and management is needed; cooperation in biodiversity conservation should include protected areas such as national parks and nature reserves. Protected areas need to be maintained as a network rather than on their own in order to sustain biodiversity. Many African countries can be used for lessons in biodiversity conservation, including across frontiers.

The threats from poaching in protected areas need to be addressed. Rhino poaching and abalone fishing are cases in point. The main suspects for poaching of rhinos, for instance, come from Asian countries, including China. This is an area of immediate importance, working jointly against poaching and illicit trading of certain species.

Desertification is a clear matter for mutual learning. Chinese expertise from projects in northern China might be applicable in the Sahel and sustainable land management practices such as zai-pits used in the Sahel could provide lessons for China.

FOCAC should also create a knowledge sharing environment. Chinese investment projects in Africa will need to implement measures to prevent and redress water pollution, not least in the case of mining. African governments, for their part, need to increase their focus on water pollution, as some lakes – for instance Lake Victoria – suffer from poor waste water management. This is an area for mutual learning.

Further cooperation should take place in environmental awareness and education. A considerable lack of environmental awareness makes conservation difficult in both China and Africa, with some good practice to be found in both.

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