



UNITED NATIONS
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WIDER Working Paper 2014/087

Understanding Chinese and Western development finance in Uganda, South Africa, and Zimbabwe

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May 2014

Abstract: China's importance as a major donor outside the traditional Western donors has been increasing and this has helped to bridge the funding gaps in developing countries. At the same time, South-South financial assistance still comes with less conditionality making China's aid model different to Western donors. China dominates as a donor for Zimbabwe with substantial aid also going into Uganda and South Africa while South Africa is the darling of Western donors. Chinese funded projects are not confined to a specific sector and the scale of the projects varies across countries. While little is known about environmental aid from China, the magnitude of environmental aid from Western donors suggests there is a need to explore other areas to leverage the effect of environmental aid on the environment. Overall we find that aid disbursements are significantly lower than commitments for all three countries.

Keywords: Africa, aid, China, development finance, environmental aid, South-South co-operation

JEL classification: O190; Q560

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This study has been prepared within the UNU-WIDER project 'ReCom–Foreign Aid: Research and Communication', directed by Tony Addison and Finn Tarp.

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ISSN 1798-7237 ISBN 978-92-9230-808-7

Typescript prepared by Lesley Ellen for UNU-WIDER.

UNU-WIDER gratefully acknowledges the financial contributions to the research programme from the governments of Denmark, Finland, Sweden, and the United Kingdom.

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1 Introduction

This paper has four objectives: to compare Western¹ and Chinese aid to Uganda, South Africa and Zimbabwe; to determine the importance of China as a donor in and across the three countries; to understand the patterns of environmental aid in the three countries; and to determine the disbursement rates across countries by donor type.

Uganda, South Africa, and Zimbabwe are three African countries that have greatly benefited from donor aid to some extent. Donor funds affect developing countries in several ways; through promoting economic growth, development, and the welfare of recipient countries, thereby helping reduce poverty levels (Burnside and Dollar 2000; Hansen and Tarp 2001). However, the ability of donor funds to meet these objectives depends on several factors. It is important therefore to understand the nature of aid within each country and also among the three countries given their different structural challenges and developmental needs. Broadly, one can distinguish between the two sources of aid, namely Western aid and South-South aid, particularly Chinese aid. In the past, China's importance as a major donor outside the traditional Western donors has been increasing and this has helped to bridge the funding gaps in developing countries.

However, not much is currently understood about the nature of Chinese aid in terms of the magnitude of the projects it supports or the sectors it targets. It is unclear whether China supports bigger projects on average in developing countries compared to Western donors. Donors often adopt different strategies with respect to the scale of funded projects, opting to fund a few bigger projects, many small projects, or a mixture of the two. Also the extent to which China funds mega-projects, which have significant negative environmental impacts compared to Western donors, is unknown. It is not surprising that little is known about Chinese aid given the lack of transparency associated with its aid activities (Grimm et al. 2011). As such, it is important to understand donor aid in the three countries in terms of the number and size of projects supported. Comparing the amount of Western and Chinese aid can enable us to gain an understanding of who is the darling of donors among the three countries and possibly an explanation as to why donors are attracted to a particular recipient country.

While the amount of donor funds received from Western donors is well documented, we seek to understand the quantity of donor funds each country has received from China and compare this to what has been received from traditional donors across the different sectors. In other words, it is crucial to determine the importance of China as a donor in the recipient countries and ascertain whether China dominates as a donor in all three countries.

While aid projects have the capacity to generate revenue and contribute to economic growth, they can also have detrimental social and environmental impacts.² From around the mid-1980s, Western donors increasingly came under pressure for funding projects such as road-building, mining, and dams which displaced large numbers of people (Hicks et al. 2008), thereby destroying local livelihoods in addition to having significant negative environmental impacts.

¹ The term Western aid refers to Official Development Assistance (ODA) by the 28 members of the Development Assistance Committee (DAC) as of November 2013, bilateral and multilateral organizations.

² Hicks et al. (2008) argue that the humanitarian impact of a project is different from its environmental impact. As such, one needs to disregard the intentions of a project when analysing its environmental impact. For example, most projects aimed at the agricultural sector have positive impacts on the welfare of citizens while they have major negative impacts on the environment through, for example, habitat conversion.

Chinese aid was later subjected to similar criticisms (Bosshard 2008; Strange et al. 2013). It is, however, unknown how much contemporary aid flows, especially from China into Uganda, South Africa, and Zimbabwe, reflect these traditional funding patterns. Similarly, we also seek to understand the patterns of environmental aid allocation in the three countries. It is therefore important to systematically track changes in the amount or allocation patterns of environmentally damaging aid by looking at funds that have gone into projects such as infrastructure, agro-business, energy, and extractive industry projects (e.g. mining and drilling) as these are considered ‘dirty’ (Hicks et al. 2008).³ Some sectors are generally dirtier than others and therefore have more negative environmental impacts. China is generally criticized for funding activities such as mining which have greater negative effects on the environment. Understanding the major motives for aid-financed projects is often one way to see if the aid has any direct link with environmental protection, prevention of biodiversity loss, and climate change mitigation, etc. This can enable one to say more about the principal objective of the aid.

A common trend with donor aid is the variance between disbursements and commitments. Following a commitment to provide aid, donor countries often come up with a range of conditions to be met before disbursement. In some cases, prospective aid recipients are able to meet these criteria timely leading to complete disbursements while other recipients are unable to meet most of the criteria leading to partial disbursement. In cases where a country fails to meet the criteria set, this can result in no disbursements at all.⁴ In that regard, it is therefore important to analyse aid disbursement rates. We generally expect disbursement rates to be low where recipient countries are unable to meet the stipulated conditionality after a donor commitment. Failure to meet conditionalities could also point to capacity issues on the ground. One scathing criticism that has been levelled against Chinese aid is that with little or no attached conditionality, recipients are less likely to carry out beneficial reforms, tackle corruption and incompetence, and streamline public expenditures (African Development Bank 2010; Bosshard 2008; Mwenda 2006). While this criticism is common for all aid irrespective of donor source⁵, Chinese aid comes with even less conditionality than Western aid, thereby worsening the problem. Naturally, recipient countries prefer to deal with a donor with less conditionality. Given this, one can therefore hypothesize that China, as a donor, should have higher disbursement rates compared to Western donors. It is therefore important to determine the aid disbursement rate in each of the countries. More importantly, we seek to determine how the disbursement rate differs across countries and donor types and how this compares in general to commitments made by the different donors.

In order to learn more about the economic, social, political, and environmental impact of Chinese development finance in Africa, we need two things. First, we need systematic evidence of what the Chinese government is funding, how much it is spending, and where these projects are located. Second, we need to understand these development projects in the context of

³ It is important to note that some projects have a neutral impact on the environment. In most cases any negative and positive impacts associated with the projects cancel out with the result that the net effect on the environment is zero. Examples include projects to deal with promoting free trade, providing balance of payments support, helping small and medium enterprises, promoting exports, health, and education sector projects, telecommunications and telecommunications infrastructure projects, and emergency aid (Hicks et al. 2008).

⁴ Also countries that meet the conditionality are likely to experience a shorter time lag between commitments and disbursements. Donors are also increasingly concerned about the abuse of development finance in recipient countries. In some countries aid has been temporarily suspended by donors pending reform. Examples include Uganda in 2011 and Malawi in 2013.

⁵ Despite billions of dollars being committed to aid since the 1960s, there is very little change in the list of recipient countries, suggesting that the developmental goals of aid have been elusive and that many donors are actually advocating for more funding (Easterly 2003; Goodman 2011).

alternatively sourced projects. Other potential sources of finance include private banks, African governments, or traditional Western aid donors. With better evidence on actual development projects, we will have a much greater ability to describe Chinese development finance in Africa and explain its effects. Such description and explanation are necessary conditions for more informed decision-making by African governments and citizens. This paper is organized as follows: Section 2 takes a look at the implications of South-South co-operation while Section 3 gives a brief background to the developmental challenges faced by Uganda, South Africa, and Zimbabwe. Section 4 analyses the trends in official development finance in the three case study countries, Section 5 analyses environmental aid, while Section 6 concludes.

2 South-South co-operation

China is one of the emerging countries providing a significant amount of South-South co-operation assistance alongside Brazil and India. The emergence of China as a donor has opened up new sources of funding that have been previously unavailable to African countries. Most striking is that, unlike aid from the traditional Western donors, South-South financial assistance comes with fewer conditions. China therefore has a different aid model compared to Western donors.

The increase in South-South co-operation is, however, taking place against a backdrop of increasing global acknowledgement that the manner in which ODA is provided is directly and critically linked to the development outcomes achieved. At the same time, ODA is still conditional, tied, unpredictable, donor-driven, and characterized by high transaction costs on the side of the recipient country and insufficient development impact or sustainability (Venter 2008). In an effort to increase the effectiveness of ODA, a number of international initiatives such as the Millennium Summit in 2000; the Rome meeting in 2003, where the Rome Declaration was adopted; and the High Level Forum on Aid Effectiveness, which gave rise to the Paris Declaration of 2005, have sought to increase aid transparency. Demands to make ODA more transparent are increasing by the day with organizations, such as Publish What You Fund and AidData, in the forefront while others, such as the International Aid Transparency Initiative, hope to ensure that aid money reaches the intended recipients.⁶ The overall objective is to ensure that aid results in a reduction in poverty, infant mortality, and creation of better living conditions for the marginalized.

In recent years, Chinese aid to developing countries has increased in size and scope with Africa now China's main aid recipient. The phenomenon of Chinese aid to Africa is, however, not new. China has been providing aid to Africa since 1956 (Strange et al. 2013). Associated with the increase in Chinese aid to Africa is also the growth of China's economic interest in Africa. China's interests in Africa now cover all sectors of the African economy from natural resource exploitation, infrastructure investment, manufacturing, energy, communication, health, education, and cultural projects. China is therefore playing a huge role in closing funding gaps in Africa. However, little is known about the environmental impacts of Chinese aid in Africa since China releases little information about its funding activities in Africa and the China Exim Bank and China Development Bank, the main lenders, publish no data. This has hampered an

⁶ In an effort to promote aid transparency, Publish What You Fund came up with the Aid Transparency Index which ranks donor aid agencies in the world according to the amount of detail they provide about their aid activities. In the 2013 index, China was placed last out of 67 bilateral and multilateral donors with a ranked scoring of only 2.2 per cent (Basu et al. 2013). In the absence of any official reporting of aid activities by donors such as China, AidData has initiated a media-based data collection method to track the level of Chinese development assistance to developing countries.

effective assessment of the environmental impacts of its aid policy in Africa. In addition, outside estimates of the extent of Chinese aid vary widely (Strange et al. 2013). Given this, a number of studies have therefore focused on China's role in Africa, mainly in the area of labour standards, human rights, and economic growth among other issues. The recent efforts by AidData to crowd source data on Chinese aid in Africa have therefore enabled researchers to make a genuine and immediate contribution to the environmental impact of Chinese aid in Africa.

3 Country background and aid information

The structure and development levels of a country determine the type and amount of aid the country will attract and also the impact and effectiveness of the aid. A substantial literature has emphasized the importance of recipient country characteristics such as gross domestic product (GDP) per head, ties to the donor country⁷, level of hunger and malnutrition, quality of infrastructure and institutions, and the child mortality rate (Bandyopadhyay and Vermann 2013; Goodman 2011; Hanse et al. 2013). In addition, bilateral aid is also heavily driven by the strategic objectives of the donor (Bandyopadhyay and Vermann 2013; Goodman 2011). This section looks at the backgrounds of the three case study countries to better establish their current priorities.

3.1 Uganda—economic indicators

Uganda is a low-income country with a population of 36.35 million as of 2012 and GDP of US\$19.88 billion at current prices. The GDP per capita, purchasing power parity (PPP) (constant 2005 international \$) in 2012 was US\$1,165 (see also Table 2) (World Bank 2013b). The country has made huge improvements, aided by the high growth rates experienced in the past. This has resulted in the proportion of people living on less than US\$1 per person per day falling from 56.4 per cent in 1992 to 24.5 per cent in 2009 (African Development Bank 2010; United Nations Statistics Division 2013). Uganda significantly depends on international aid to fund some of its needs including budgetary support. The Ugandan economy is dominated by agriculture which is also the main foreign exchange earner and one of the largest absorbers of labour. As a poor country, Uganda has benefited from the Heavily Indebted Poor Countries Initiative through debt relief from the World Bank and the International Monetary Fund. Even though the country is relatively poor by African standards, the chances of the country transforming itself into a middle-income country have never been much better due to the recent oil discoveries. The new oil economy will change the economic trajectory of the country positively.

The importance of aid in Uganda was recently highlighted when several donors suspended aid to the country in November 2012. This constrained economic recovery after a slowdown in the economic growth rate which started in 2009. The governance scandals, involving the office of the Prime Minister and the Ministry of Public Service during the second quarter of the year, resulted in the freezing of aid estimated at US\$300 million (4-6 per cent of the 2013 national budget or 0.9 per cent of GDP).⁸ The impact has been a crippling of the fiscal operation of the country as well as increasing economic uncertainty among others (World Bank 2013a). While the recent disruptions to aid highlight the extent of aid dependency in the country, the disruption might, however, lead the government to reduce spending in key sectors as it seeks to plug the

⁷ For example, a substantial fraction of French aid has been directed to its former colonies while geopolitical interests are behind most Japanese and US aid. In the US, the war on terrorism, for example, is largely behind the flow of aid to countries such as Pakistan.

⁸ This supports the argument by aid critics that aid is problematic as it postpones economic reforms and the emergence of a transparent and accountable government thus increasing a country's dependency on aid.

financing gap created in the short term. Low priority sectors such as the environment might be the immediate casualties of budget realignment.

Non-income human development indicators

The population of Uganda is concentrated in the rural areas (as of 2012, 84 per cent of the population was rural-based) and therefore heavily dependent on the exploitation of natural resources for a living. The annual rate of population growth is one of the highest in the world standing at 3.2 per cent in 2012. The country is rapidly urbanizing with the rate of population change in the urban areas at 5.7 per cent (United Nations Statistics Division 2013). Over the past years, a number of non-income indicators of poverty have shown marked improvement. Primary school enrolment rates have more than doubled since 1996 even though completion rates are still very low, standing at 37.9 per cent in 2008 (African Development Bank 2010). The country has registered a decline in infant mortality from 122 deaths per 100,000 live births in 1991 to 72 in 2010, while the under-five mortality rate stood at 114 (United Nations Statistics Division 2013). Other measures such as stunting in children are, however, still very high at 32 per cent for children under five years. Maternal mortality, while still high, fell to 310 per 100,000 live births in 2010 from 505 in 2000. This was as a result of limited access to existing health facilities. The average life expectancy at birth currently stands at 55. On average, 72 per cent of the population (68 per cent in rural areas) and 95 per cent of the urban population had access to safe water in 2010, while access to sanitation was estimated at 34 per cent for both the rural and urban areas (United Nations Statistics Division 2013). Generally, the level of development of a country shapes its developmental needs and therefore the nature of aid assistance differs from one country to another.

Foreign aid in Uganda

Uganda receives aid from a variety of different sources; mainly the International Development Association and Organisation for Economic Cooperation and Development countries. Uganda has been a significant beneficiary of ODA from the West as well as China. Foreign aid makes up about 50 per cent of the government's budget and helps to finance free primary education, free basic health care, and infrastructure rehabilitation and maintenance. Table 1 highlights the priority areas for major donors in Uganda.

Table 1: Aid commitment priority areas by major donors

Donor	Major aid focus areas
European Union (EU)	Humanitarian aid, budget support.
World Bank (International Development Association) (IDA)	Energy (electricity projects), health, and agriculture sectors, and the recovery of northern Uganda.
USA	Food aid and health support, budget support, governance, peace, and reconciliation efforts.
UK	Health sector, recovery of northern Uganda, food aid, social protection, and budget support.

Source: AidData (2013).

The sum of the amount of funds committed to listed areas exceeded 50 per cent of commitments from the donors during the period 2005-11. Most of the funding is geared towards poverty reduction. Budget support is the highest type of assistance Uganda has received to date. All the major donors have provided budget support in one form or another.

Current environmental threats

Uganda faces a number of environmental challenges such as: poor farming methods; population pressure, coupled with limited non-farm income-generating opportunities; inefficient use of energy sources; and land-use conflicts. In addition, climate change poses serious challenges in the agricultural sector as evidenced by erratic, unpredictable, and below average rainfall, coupled with high temperatures experienced in recent years in some parts of the country. This has increased vulnerability of the rural population predominantly reliant on rain-fed agriculture for livelihoods and thus elevating the importance of aid in the country. The current warm temperatures being experienced can also potentially lead to an increase in plant pests, further exposing the rural farmers. In addition, the low rainfall received has also affected the generation of hydropower in the country (African Development Bank 2010).

The National Environmental Management Authority (NEMA) is responsible for environmental protection in Uganda. However, the agency faces capacity constraints to carry out its mandate. As such, this has limited its ability to reverse environmental degradation including declining soil fertility, deforestation, pasture degradation, decreasing fish stocks, and water pollution. In response to the climate change threat, the government has prioritized the collection of climate data and its subsequent availability to intended beneficiaries. This is in addition to other initiatives intended to reverse deforestation and mitigate the perceived environmental threats through construction of reservoirs and pilot irrigation schemes, growing fast-maturing crops resistant to low rainfalls, and building the capacity of NEMA and the Meteorological Department (African Development Bank 2010). The suspension of aid disbursement, while expected to resume later on, can heighten the risks associated with the irreversibility associated with environmental degradation, and possibly cause significant reversals of current environmental gains. Given that the Ugandan economy's exports are largely driven by the agricultural sector, which is sensitive to climate change, the effect could be significant and economy-wide (World Bank 2013a). Moreover, agriculture provides employment for about 83 per cent of the population.

Environmental funding

Uganda receives some funding for environmental protection through NEMA. The commitments towards the environment, however, are not as significant as those going into other areas which have a direct impact on reducing poverty, such as poverty alleviation projects, humanitarian aid, and budget support. Most funding for the environmental sector has been geared towards addressing a number of areas including sustainable land management, water resource management, forests, wetlands, entire biodiversity and ecosystems, and climate change. These areas assume prominence due to the massive land productivity decline in Uganda where agriculture is the backbone of the economy with many industries depending on it for the supply of raw materials. Enhancing land productivity is important for agro-based industries, improving household earnings, and bolstering food security.⁹ More importantly, the environment is also crucial for the tourism sector in Uganda. Investing in other areas which have a direct impact on the environment is also important. Sectors such as energy and mining, transport, and urban development have close linkages to environmental outcomes and therefore need to be prioritized. Addressing these areas will also have a major impact on the efforts to reduce poverty rates.

⁹ Note that most aid going into the agricultural sector is classified as 'dirty' despite the positive intentions of the donor. Improvements in agricultural productivity generally put pressure on acquiring more land for agriculture, resulting in destruction of habitats, for example.

Figure 4 in the Appendix to this paper shows Uganda's receipts of development finance from China. It appears that most of the aid was directed towards transport, storage, and the communication sector. Decomposing development finance according to sector for all the donors excluding China, as shown in Figure 5 in the Appendix, demonstrates that transport and storage remain an area of importance in terms of aid receipts. Other notable important areas are water supply and sanitation, trade policies and regulations, and tourism. For international donors, education, population services, and other areas, such as health, also assume prominence. It is also important to note that Uganda attracts a substantial amount of funding into programme assistance, suggesting that capacity issues dominate in Uganda. In general, donors increasingly try to build capacity in recipient countries to aid effective implementation of projects. This is in line with recent efforts in development literature to focus on building institutions, improving governance, and reducing corruption levels as a possible solution to a lack of economic development in poor countries.

3.2 South Africa—economic indicators

South Africa is classified as an upper middle-income country with a population of 51.19 million in 2012 and GDP (current prices) of US\$384.3 billion in 2012.¹⁰ Given South Africa's size and wealth, it performs comparatively well in all the economic indicators as well as most human development indicators compared to Uganda and Zimbabwe.¹¹ However, due to the legacy of apartheid, South Africa still grapples with high levels of inequality and poverty especially for the previously disadvantaged African population group. As such, most economic and non-income indicators are comparatively low for this population category. South Africa is more urbanized with 62 per cent of its population living in urban areas in 2012 while 16 per cent and 39 per cent of Uganda's and Zimbabwe's populations are based in urban areas. Uganda and Zimbabwe are also experiencing high rates of urbanization and most of the development challenges that they currently face have their source in high population growth. The economy of South Africa is also highly diversified while in Uganda agriculture absorbs over 80 per cent of its economically active population. Given the significantly different economic structures and development challenges, it is important to note the significance of this in shaping the type of aid and also the sectors into which this aid is channelled in the three countries.

Table 2 gives the GDP per capita for all three countries. The data shows that for income indicators, South Africa is on average significantly better off compared to Uganda and Zimbabwe. However, one also needs to take into consideration the high inequality levels in South Africa.

¹⁰ Technically, South Africa does not qualify for many donors as a recipient of ODA. Increasingly donors cite the middle-income status of the country as a reason for withdrawing many forms of ODA (Venter 2008). However, this may be misleading given the high levels of structural poverty, inequality, high crime statistics, and HIV/AIDS prevalence rates in South Africa.

¹¹ Measures such as the life expectancy at birth are comparable for the three countries possibly due to the high incidences of HIV/AIDS in South Africa.

Table 2: GDP per capita, PPP (constant 2005 international \$)

Year	South Africa	Uganda	Zimbabwe ¹
2000	7,641	772	676
2001	7,691	785	681
2002	7,864	826	618
2003	7,993	850	511
2004	8,259	877	481
2005	8,597	902	453
2006	8,977	966	437
2007	9,372	1,012	420
2008	9,605	1,064	345
2009	9,357	1,104	362
2010	9,516	1,130	392
2011	9,730	1,165	419

Note: ¹GDP per capita (constant 2005 US\$).

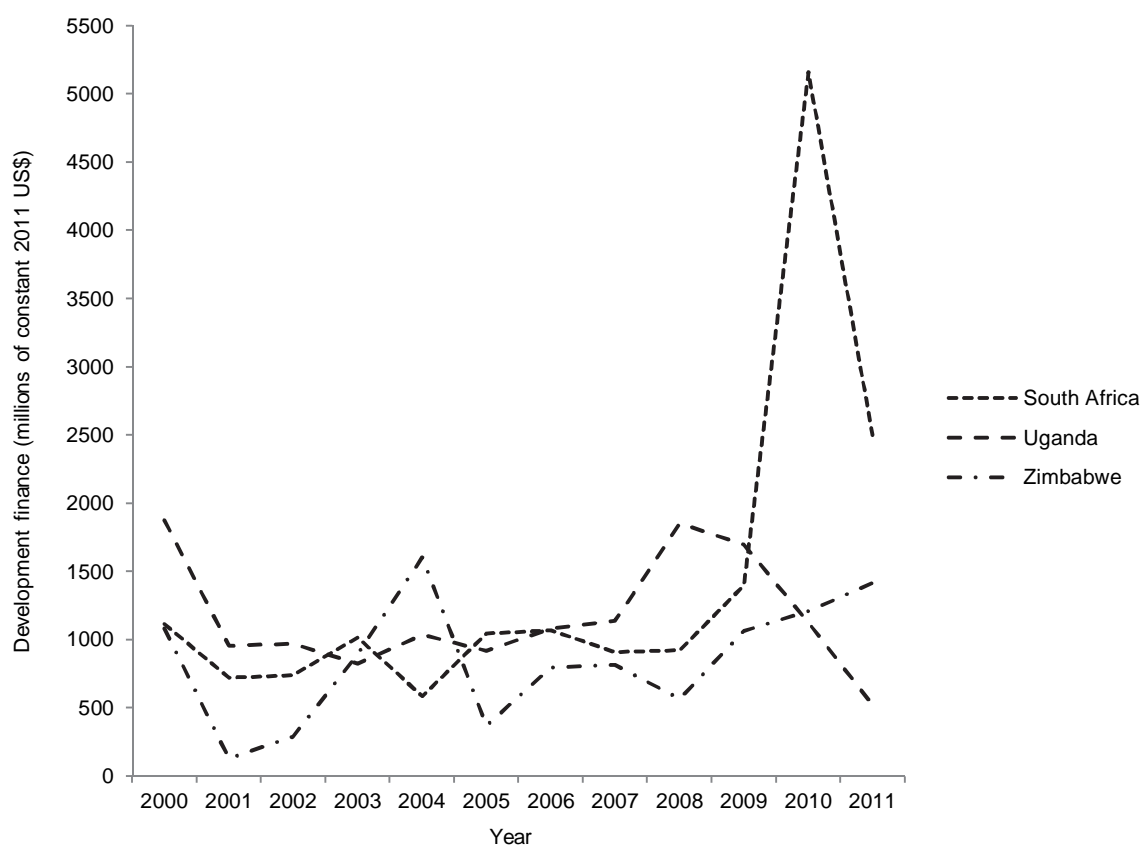
Source: World Bank (2013b, 2013c).

ODA in South Africa

South Africa receives ODA mainly in the form of grants and in-kind support. The country is not a recipient of concessional loans, given that it can easily borrow at competitive rates on its own markets depending on need. About 44 per cent of the ODA flowing into the country is in the form of in-kind support while overall ODA makes up approximately 1 per cent of the country's budget (Venter 2008). ODA in South Africa is used mainly to help address the country's development and transformation priorities. These include the growth and development of the first economy, challenges of the second economy, and providing a social security net to address poverty alleviation (Venter 2008). Given this, the economic and social sectors are the largest recipients with the greatest concentration of donors in the health sector (22-25 donors) (Venter 2008). Foreign aid mainly assists in its economic development efforts and reducing high poverty rates associated with apartheid's past. Also South Africa has high levels of HIV/AIDS and, as such, it receives substantial funding from the Global Fund which is also one of its largest donors. This contrasts with Uganda where the HIV/AIDS prevalence fell from 18 per cent in 1992 to 6.4 per cent in 2008 and has remained very low. The South African government also receives significant foreign funding for the environment.

Figure 1 shows Uganda's, South Africa's, and Zimbabwe's receipts of development finance from all international donors. Development finance in Uganda appears to have stagnated at around US\$1.2 billion a year before going down in 2011, while aid into South Africa reached an all-time peak of over US\$5 billion in 2010 before coming down. On the other hand, development finance in Zimbabwe averaged only US\$0.9 billion following the suspension of development finance by Western donors since 2000. Figure 1 clearly highlights the non-uniform aid dynamics among the three recipients. Also evident from Figure 1 is the variation in aid over time. It is also important to note that while South Africa receives more aid than Uganda and Zimbabwe (US\$1.4 billion on average during the period), net ODA is a very small percentage of South Africa's gross national income while net private flows are very high. It therefore appears that while ODA remains important and high in absolute amounts for South Africa, its foreign receipts' sources are diversified, showing the country is not aid-dependent but rather, that aid augments domestic resources in addressing key developmental priorities.

Figure 1: Total flows of development finance (millions of constant 2011 US\$) by multilateral and bilateral donors



Source: AidData (2013).

3.3 Zimbabwe

Zimbabwe is classified as a low-income country with a population of 13.72 million and GDP at current prices of US\$10.81 billion in 2012. As a low-income country, it has also received significant development assistance from international donors. Most economic indicators are very poor due to the political and economic problems that have affected the country since 2000. Non-income indicators are also poor with maternal mortality rates standing at 570 in 2010.

Due to its low-income status, the country is heavily dependent on aid. However, following the economic and political crises around 2000, bilateral and multilateral official development assistance declined drastically. While development aid flows suffered, a steady flow of humanitarian assistance was maintained with such aid accounting for around 6 per cent of GDP by 2006 (Simpson and Doré 2009). At the same time, Chinese development assistance increased as Zimbabwe turned to China to help close the funding gap. Since 2000, international aid has been mainly directed towards HIV/AIDS prevention, democracy and governance programmes, humanitarian assistance, economic growth and agriculture, and investing in people.

4 Analysis of development finance assistance in Uganda, South Africa, and Zimbabwe

This section makes a comparison of the aid commitments and disbursements from donors to the three countries during 2000-11, to gain a better understanding of the major donors in the three countries and the amounts involved.

From Table 3, the USA is the leading donor in terms of commitments to Uganda while China is the leading donor in Zimbabwe and the second most important donor for South Africa.¹² China had a total of 123 project commitments in Zimbabwe, 57 in Uganda, and 33 in South Africa over the period 2000-11. Also, Zimbabwe received on average US\$0.528 billion per year from China during the period 2000-11. This is significantly more than the total Chinese average aid receipts in the other countries combined. Clearly, Zimbabwe appears to be the darling of the Chinese. The huge gap between Chinese and US aid commitments in Zimbabwe clearly highlights the importance of China to the country.

Table 3: Top ten donors of development assistance by commitment, 2000-11¹³

	Uganda	US\$ millions*	South Africa	US\$ millions	Zimbabwe	US\$ millions
1	USA	1,942	World Bank – (IBRD)**	3,715	China	6,334
2	UK	1,899	China	3,657	US	1,028
3	World Bank-IDA	1,605	EU	2,416	UK	662
4	EU	1,302	US	1,670	EU	492
5	China	1,049	Germany	958	Global Fund	287
6	Netherlands	764	France	907	Germany	239
7	Norway	590	UK	680	Sweden	147
8	Ireland	585	World Bank–(IFC)***	565	Norway	147
9	Denmark	573	Netherlands	526	Netherlands	138
10	AFDF****	505	Japan	257	Denmark	92

Notes: * The figures given refer to commitment amount in constant 2011 US\$; ** International Bank for Reconstruction and Development (IBRD); *** International Finance Corporation (IFC); **** African Development Fund (AFDF).

Source: AidData (2013).

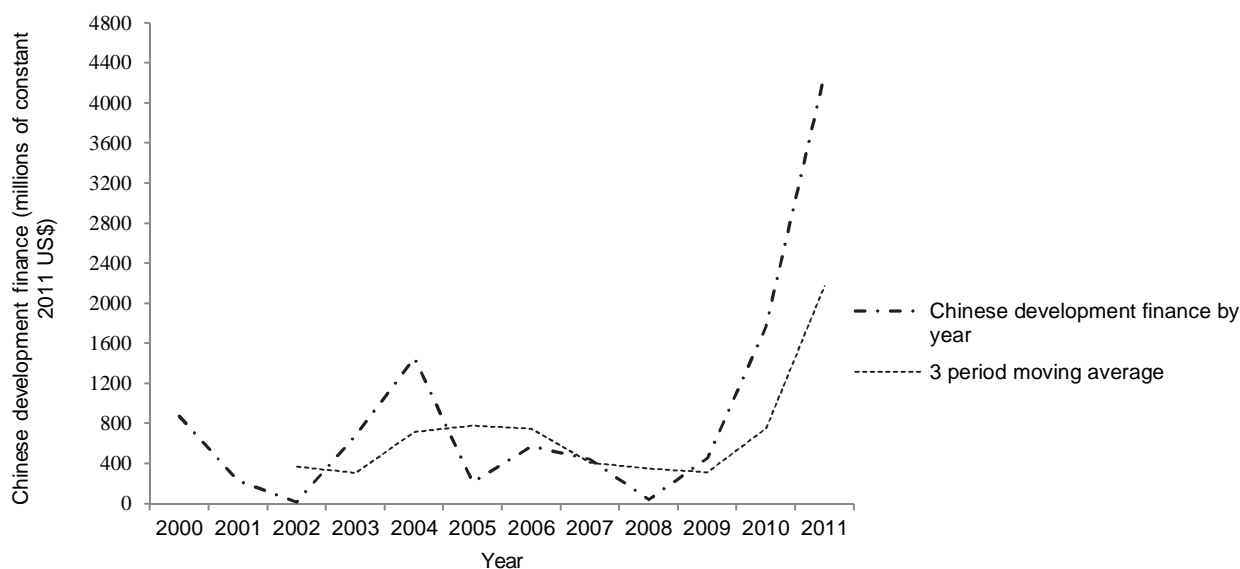
Figure 2 shows that Chinese aid has peaked since 2008, mainly due to an increase in aid towards South Africa, and this surge partly explains the greater ranking of China over the period. The table also highlights the importance of multilateral donors for Uganda and also South Africa. The significance of China as a donor for South Africa suggests the importance of the country in Sino-Africa relations and the fact that both South Africa and China belong to BRICS (Brazil, Russia, India, China, and South Africa) further highlights the commonalities between the two countries. Also, while the number of Chinese-funded projects in Uganda and Zimbabwe dwarfs those in South Africa, the magnitude of funding going towards South Africa suggests that the scale of China's projects in South Africa is significantly large compared to Uganda and

¹² However, it is important to note that the ranking of China as a donor for South Africa can change significantly given that there is data for only four years and that 28 South African projects in the dataset have missing values.

¹³ All China aid data includes pledges, commitments, ongoing, and completed projects.

Zimbabwe. This could also point towards co-ordination issues in Uganda and Zimbabwe.¹⁴ South Africa could have the capacity to marshal donor funding into its development priority areas to optimize its impact. A lack of donor co-ordination could result in small projects erupting all over the place as donors lack guidance about the key areas to finance. The differences in the commitment amounts by donors can depend on many things including the scale of projects funded in both countries. If the USA has more projects in Uganda than South Africa and Zimbabwe, then more of its funds will flow to Uganda. Also, most aid coming from the USA has conditionalities attached to it. This could lead to great variability between the sizes of commitments in the three countries.

Figure 2: Chinese development finance in Uganda, South Africa and Zimbabwe



Source: AidData (2013).

In order to understand more about the behaviour of donors in the three recipient countries, it is important to also rank the donors according to disbursements and to look at the deviation of disbursements from commitments. Table 4 presents the ranking of donors by disbursements. It is clear that the USA dominates in terms of total aid disbursed over the period. Multilateral institutions remain important especially the Global Fund to Fight Aids, Tuberculosis and Malaria in South Africa and Zimbabwe.¹⁵ It also appears that in all the countries, there is a deviation between disbursements and commitments. For example, in South Africa, US commitments were 38 per cent higher than actual disbursements in real terms. Over the period, the deviation was greatest for the UK in all recipients when we exclude the EU in Zimbabwe. It could be that the conditionality associated with the UK is too high, thereby significantly affecting actual disbursements. However, the huge deviation also signifies considerable altruism on the part of the UK which can be manipulated by recipients into actual disbursements. Ireland and the United Nations Children’s Fund (UNICEF) are two donors for whom disbursements closely follow commitments. For UNICEF, the nature of the aid might make it difficult on the part of

¹⁴ It is also possible, in addition to lack of co-ordination among the different donors and the Ugandan government, that lack of co-ordination among Chinese donor agencies may also give rise to significant duplication of projects on the ground.

¹⁵ In line with our earlier observation, this result underlies the disproportionate interest in South Africa’s health sector.

the recipient if disbursements are considerably lower than commitments. One peculiar case from Table 4 is that of France where aid disbursements exceeded commitments by 1 per cent for South Africa.

Table 4: Top ten donors of development assistance by disbursements, 2000-11

	Uganda	USD millions*	% deviation	South Africa	USD millions	% deviation	Zimbabwe	USD millions	% deviation
1	US	1,172	40	US	1,028	38	US	804	22
2	Ireland	546	7	France	915	-1	UK	294	56
3	IDA	524	67	World Bank-IBRD	368	35	Global Fund	197	32
4	UK	408	79	Germany	293	69	Germany	108	55
5	Netherlands	331	57	UK	198	71	Norway	90	39
6	Norway	250	58	Netherlands	178	66	Netherlands	86	38
7	Japan	242	18	Belgium	167	18	Sweden	86	42
8	Germany	179	64	Ireland	166	6	Ireland	79	3
9	Sweden	172	65	Global Fund	113	31	EU	77	84
10	UNICEF	147	0	Norway	66	72	Japan	64	13

Note. *The figures given refer to disbursement amount in constant 2011 US\$.

Source: AidData (2013).

From Figures 3 and 4 (both in the Appendix), it appears Chinese aid in Uganda, South Africa, and Zimbabwe is spread across a vast number of sectors. A significant amount, however, goes into industry, mining, construction, transport, and storage, while funding to agriculture is also substantial. Over this period, there were no projects in the energy-generation and supply sector financed by China in South Africa and Uganda, while the Chinese invested heavily in energy generation in Zimbabwe. The absence of energy-generation projects could be due to the nature of the industry. Even though electricity generation in Africa is underfunded, natural economies of scale, which characterize the industry, tend to discourage piecemeal investments, and this also precludes other donors if a particular donor is already involved.¹⁶ Also, it appears that China tends to support less projects in sectors such as health, education, population policies, and banking, and financial services.

5 Environmental aid

Environmental conservation has been part of global efforts towards sustainability for some time. In 1972, the Stockholm Declaration sought to establish an 'Environmental Fund' and soon environmental conservation became part of the international development agenda following the World Conservation Strategy of 1980. The creation of the United Nations' Global Environmental Facility (GEF) in 1991 and the subsequent pledges at the 1992 Rio Summit led to the growth in biodiversity aid. The major motivation for biodiversity aid emanates from the fact that the richest stores of biodiversity and natural resources are located in poor developing countries where the potential for environmental damage is substantial but outside the sovereign control of Western governments (Hicks et al. 2008). Indeed, one of the reasons why donors make transfers is because the well-being of the recipient enters the utility function of the donor.

¹⁶ Indeed, when one considers the entire universe of donors, there is a sizable amount of funding in this sector for the three countries (see Figure 5).

This is so since the environment generates positive consumption externalities of a global nature which motivate the donor to make a transfer (Kanbur 2006). In addition, the pressure to raise living standards in these countries often leads to unsustainable exploitation of natural resources since fencing off forests and controlling carbon emissions would reduce economic growth in the short term. Aid is therefore seen as one of the ways to try and encourage less developed countries to act on environmental issues that are, in most cases, ranked far below security, development, health care, and education on their domestic agendas (Hicks et al. 2008). While biodiversity aid has increased substantially since the Rio Summit, Miller et al. (2013), through analyses of the recent AidData database, show that annual flows remain significantly below the Rio commitments. They, however, observe that aid has been well targeted with the allocation of biodiversity aid positively associated with the number of threatened species in recipient countries, taking into account country size, national population, and per capita GDP.

5.1 Biodiversity significance in South Africa, Uganda, and Zimbabwe

South Africa, Uganda, and Zimbabwe have substantial biodiversity which is of both national and international significance. South Africa is rich in biodiversity and endowed with a disproportionately large population of bird, fish, reptile, plants, and mammal species relative to its size in land surface area. South Africa's ecosystems produce many important ecosystem services ranging from freshwater, firewood, healthy soils for food production, grazing, medicinal sources, pollination, carbon sinks, clean air, production of oxygen, eco-tourism, healthy estuaries for fish production, and protection from extreme events like floods and droughts. The biodiversity importance of South Africa is highlighted by the fact that it contains almost 10 per cent of the world's total known bird, fish, and plant species, and over 6 per cent of the world's mammal and reptile species. South Africa's natural wealth is, however, under extreme pressure resulting from human demands placed on the environment through economic development, agriculture, climate change, and urbanization. Invasive alien vegetation and, of late, the illegal trade in wildlife have also come to contribute to the problem. For example, South Africa is home to the Cape Floristic Kingdom which has about 70 per cent of approximately 9,000 of its plant species extinct elsewhere in the world. The Cape Floristic Kingdom has received international funding from the Global Environment Facility (GEF) and the German government through their International Climate Initiative due to its biodiversity significance. South Africa also has a significant population of the rhinoceros, currently listed by the International Union for Conservation of Nature and Natural Resources (IUCN) as endangered due to poaching. Due to its mega-diversity, South Africa ranks high among countries that received Western biodiversity aid between 1980 and 1999 (Hicks et al. 2008).

On the other hand, the biodiversity contained within Uganda is virtually priceless given the potential value of unknown genetic resources. Surveys report the occurrence of 18,783 species and the country has more primate species than anywhere else on earth of comparable area. The high levels of biodiversity are a function of Uganda's geographic location between the East African savanna region and the West African rain forests. Uganda is also estimated to have forests covering a total land area of 4.9 million hectares, constituting 24 per cent of the total land area (Moyini 2001; Winterbottom and Eilu 2006). The forests provide a range of ecosystem services ranging from maintenance of soil, water, and climate quality that support productive agriculture and fisheries. Uganda has a number of watersheds and forests that are important for maintaining the watersheds which are crucial for the agricultural and fisheries industry. The impact of forests on local climate is also important. Forests absorb carbon and therefore play an important role in helping the carbon balance in the atmosphere. Forest resources in Uganda also provide ecosystem services that underpin most human settlement and economic activity. They

also have a potential future value and an intrinsic value, irrespective of any use. These are all indirect benefits of a well-managed and intact forest resource (Moyini 2001).

The Albertine Rift, listed as one of the world's most endangered spaces, is home to over half of Africa's bird species and nearly 40 per cent of its mammal species. The region is therefore undoubtedly important for global conservation and has been under threat from habitat destruction. Uganda also has a number of water bodies such as: Lake Victoria, Lake Kyoga, Lake Edward, Lake Albert, Lake George, Lake Mbuho, and various smaller lakes; various stretches of the Nile River; and rivers, streams, and water bodies throughout the country. Taken together, these water bodies contain one of the largest assemblages of diverse freshwater fish species in the world (Winterbottom and Eilu 2006). Also, Uganda together with Rwanda and the Democratic Republic of Congo are the only home to the mountain gorilla, numbering only about 780 globally. The mountain gorilla is a key species faced with a range of threats: poaching, war, growing human populations and associated habitat loss, and natural epidemics. The gorilla is presently endangered, and appears in the appendix of the Convention on International Trade in Endangered Species of Wild Fauna and Flora. However, many of the remaining natural areas are in protected areas. The major direct threats to biodiversity in Uganda are identified as habitat loss, unsustainable harvesting and over-exploitation of natural resources, invasive alien species, and pollution (Winterbottom and Eilu 2006). The scale and extent of the threats deserves international intervention to preserve biodiversity.

Zimbabwe is endowed with a rich diversity of life forms. At species level, the country supports an estimated 4,440 vascular plant species, 214 of which are endemic; 672 bird species, 450 of which breed in Zimbabwe; 196 mammal species; 156 reptile species; 57 species of amphibians; and 132 fish species. Zimbabwe possesses abundant and diverse wildlife resources estimated to comprise hundreds of species of mammals, birds, reptile, butterflies, amphibians, and invertebrates. A number of the wildlife are listed as endangered on the IUCN Red Data List of Threatened Species (the black rhinoceros and wild dog) while other species such as the brown hyena, cheetah, white rhinoceros, hippopotamus, lion, and the African elephant are listed as vulnerable (Ministry of Environment and Natural Resources Management 2010). The importance of the environment is further highlighted by the fact that 15 per cent of the country is designated for protected forests and national parks for in-situ conservation and sustainable use of biological resources.

Due to the biodiversity significance of Zimbabwe, the country has significantly benefited from environmental funding from the GEF to support a number of local projects ranging from climate change, biodiversity conservation, and reduction of persistent organic pollutants. Zimbabwe also received environmental funding for participating in a number of regional and global environmental projects financed by the GEF (Global Environment Facility 2012). The country faces a number of biodiversity threats ranging from conflicting economic policies, deforestation and land degradation, habitat loss, wildfires, invasive alien species, pollution, land use conflicts, inadequate conservation incentives for rural communities that live adjacent to the biodiversity, and declining government expenditures on the environment (Ministry of Environment and Tourism 1998). While human-related activities have remained the major threats to ecosystems in Zimbabwe, the impacts of climate change in the past decades have increased the natural threats to biodiversity. Climate change has led to diminishing water supplies in a country where agriculture is highly rain-fed and 61 per cent of the population is based in the rural areas where reliance on natural resources is very high due to the high levels of poverty. While the country is highly endowed with vast mineral resources such as gold, diamonds, platinum, etc., the exploitation of such resources also poses a serious environmental challenge. Other environmental challenges include rapid population growth and urbanization resulting in

increased pressure on habitats and ecosystems. Further, the drive by the government to attract foreign investment with tourism, agriculture, and mining could have a significant negative impact on the environment.

Due to the biodiversity priorities in these countries, it is clear that effective conservation needs major international financial flows. It is therefore important to analyse the development finance for biodiversity and the environment in general in these countries given their significant conservation needs. Aid flows remain the largest source of conservation resources in low- and middle-income countries. There is substantial research which suggests that the environmental characteristics of recipient countries are important determinants of the allocation of environmental aid and biodiversity (Miller et al. 2013). We thus expect South Africa, Uganda, and Zimbabwe to capture a significant flow of environmental and biodiversity aid. There are, however, other factors that influence the allocation of biodiversity aid such as country wealth, geography, and population size.

Table 5: Environmental aid in 2011 US\$ for bilateral and multilateral donors, 2000-11 (in US\$)

Environmental aid	Uganda	South Africa	Zimbabwe
Environmental policy and administration management	,342	867,366	1,818,060
Environmental research	134,190	217,900	729,424
Biosphere protection	117,700	615,700	0
Water resources policy and administration management	107,824	4,753,877	1,575,981
Biodiversity	101,105	331,458	3,189,905
Environmental policy and administration management	77,490	40,530	0
Forestry education/training	65,718	65,718	0
Site preservation	49,652	367,404	390,586
Wind power	35,058	1,175,425	0
Environmental education/training	27,097	53,937	80,964
Water resources protection	27,041	1,306,305	31,274
Solar energy	28,739	5,965,932	161,208
Waste management/disposal	58,508	715,611	31,793
River development	0	1,587,497	20,310
Forestry development	2,696,726	1,564,409	0
Total environmental aid	3,767,190	19,629,069	8,029,505
Total disbursements	457,625,914	4,158,385,894	120,874,833
Environmental aid as a percentage of total disbursements	0.82	0.47	6.64

Source: AidData (2013).

Table 5 uses the recently launched AidData 3.0 database to gather, categorize, and analyse development funding by purpose over a period of 12 years (2000-11).¹⁷ We make use of the resulting data to describe trends in aid allocation. The database comprises of individual projects spanning an entire universe of sectors. We systematically classify all the aid projects that are likely to have a positive impact on the environment. We consider only disbursements by both bilateral and multilateral donors since commitments, while important, do not translate into any immediate impact on the environment. The AidData database allows us to systematically categorize all aid

¹⁷ The choice of the time period is necessitated by the fact that data on China's development assistance is only available from 2000 onwards. However, the analysis excludes funding from China due to the high level of aggregation in Chinese data available from AidData.

flows by purpose. The data therefore, affords us the opportunity to understand the effects of development finance on the environment. Uganda received US\$3.8 million in environmental aid while South Africa received US\$19.6 million and US\$8 million went to Zimbabwe. South Africa received more, possibly due to its geographical size as well as the biodiversity significance of the country. However, Zimbabwe received the largest amount relative to the total aid disbursed (6.64 per cent). This indicates that, while official development assistance from Western donors has gone down since 2000, the amount of funding going towards the environment has possibly remained stable. To some extent, this has contributed to the overall greening of aid in Zimbabwe. Classifying aid this way is important given that aid that targets biodiversity protection or sewage treatment also affects economic growth, infant mortality, and, indeed, biodiversity but via a different mechanism to that of aid targeting road construction, electricity grids, and oilrigs (Hicks et al. 2008). Development can therefore also be achieved by channelling some of the funds into the environment, thereby adding a sustainability dimension to the resultant development. Having a project level database which differentiates aid according to source of origin and purpose therefore allows us to learn more about the environmental impacts of aid in recipient countries as well as the greenness of such aid.

More importantly, the magnitude of the funds disbursed towards the environment relative to total disbursements suggest that if more greening of aid is to be attained, there is a need to incorporate environmental criteria in all projects that indirectly affect the environment. Initiatives in this regard would include environmental impact assessments for all projects that are likely to have negative environmental impacts as well as incorporating environmental aspects into tendering for such projects. Significant environmental progress will not only be achieved by direct funding into the environment but by also neutralizing the negative environmental impacts of other projects. Also, the difference between the disbursements towards the environment and total disbursements can be used to infer the amount of ‘dirty’ aid over the period.

5.2 Does source of aid determine its greenness?

A number of concerns have been raised about China’s labour practices and the displacement of local production with cheap Chinese imports, resulting in local job losses in some countries, for example. However, a few concerns have been raised by recipient governments regarding the environmental impacts of Chinese investments (Bosshard 2008). The lack of data on China’s development assistance has, however, not deterred scholars and other interest groups from drawing conclusions on Chinese aid and investment practices (Strange et al. 2013). Concerns range from claims that Chinese aid is directly linked to natural resource extraction in developing countries and disregards local environmental laws (Bosshard 2008; Compagnon and Alejandro 2013).¹⁸ It is therefore feared that Chinese investment in certain areas could contribute towards the escalation of environmental degradation in already fragile and irreplaceable environments. These accusations point to the fact that rather than complementing Western aid, Chinese aid rather undermines it.¹⁹ Compagnon and Alejandro (2013) argue that Chinese investment

¹⁸ Bosshard (2008) argues that, through funding the extraction of previously inaccessible resources, most of which have been side-lined by Western governments for environmental reasons, China has compounded the environmental risks associated with its investments.

¹⁹ Wade (2008) notes that contracts that normally take years to negotiate with traditional Western donors can take only months if funded by China. However, there is also growing resentment by others in Africa towards Chinese aid policy. China is responsible for funding a number of controversial projects in several African countries such as Gabon, Ghana, Zambia, Ethiopia, and Sudan. Here Chinese institutions funded controversial projects such as the Merowe Dam in Sudan, Lower Kafue Gorge Dam in Zambia, and the Bui Dam in Ghana which had failed to secure financial support from Western agencies and the World Bank due to possible environmental and socially adverse impacts (Bosshard 2008).

practices, with regards to the environment in Africa, are a direct replica of practices and attitude in China. Until recently, before the policy shift in Beijing, environmental considerations ranked very low in China.²⁰ They, however, find evidence in South Africa which suggests that the compliance of Chinese companies, even in environmental aspects, is probably better than that of their Indian counterparts. Given these developments, China as a source of official development finance is therefore set to become greener than before.

6 Conclusion

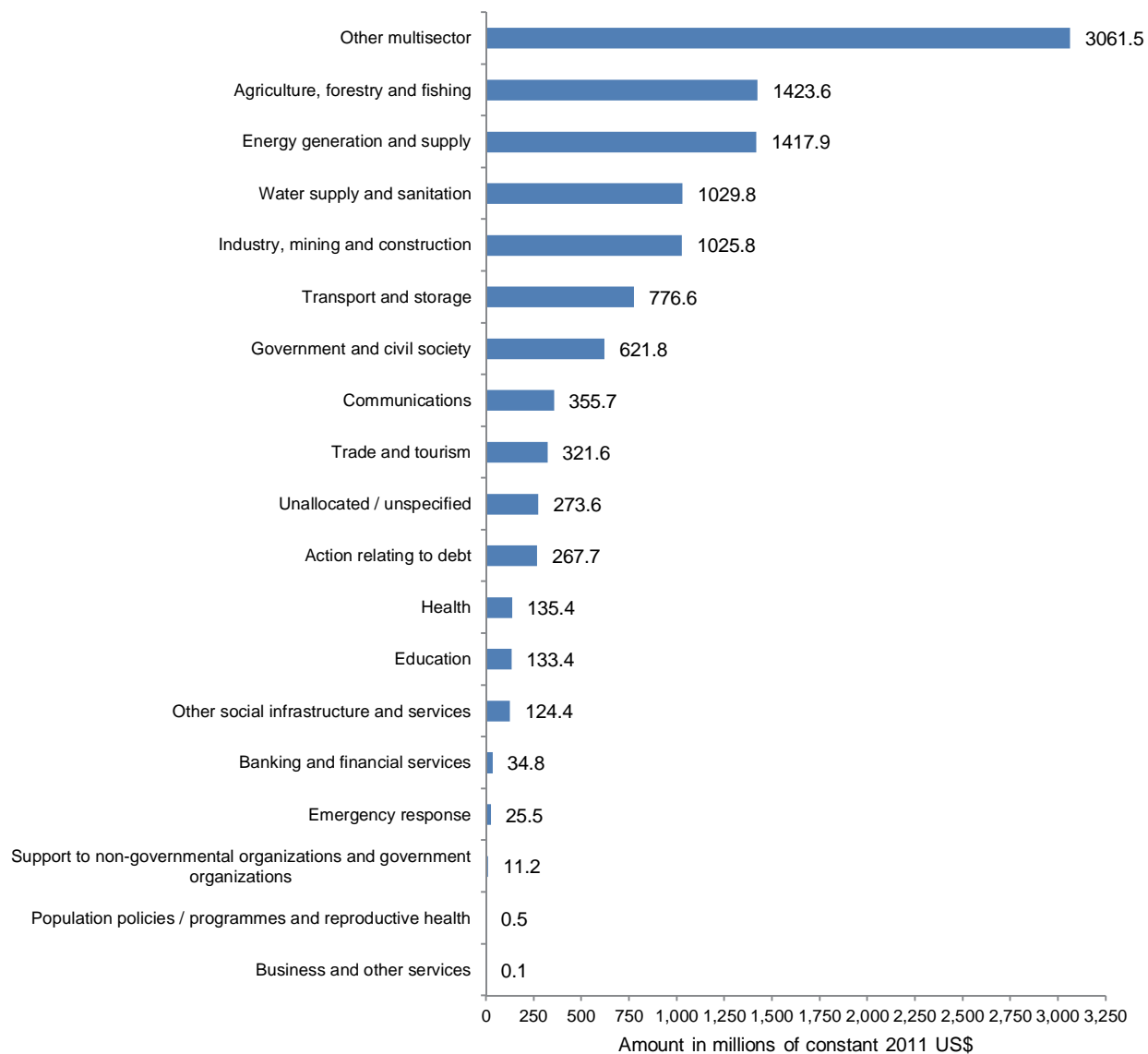
From the analysis of aid going into Uganda, South Africa, and Zimbabwe, it appears that in absolute amounts South Africa has received more aid in total over the period 2000-11. It therefore turns out that over the 12-year period, South Africa was the darling of donor countries. An explanation for this could be that due to the high levels of economic development in South Africa, there is greater effectiveness of donor funds earmarked to assist the country to develop and address the developmental challenges it faces. Given the scarcity of development funds, donors seem to favour countries which already have in place mechanisms that increase accountability and effectiveness of aid. Also, development assistance in Uganda appears to have stabilized during this period and the country, even though greatly in need of development assistance, would need to instil greater confidence in donors to generate more commitments.

Looking at China as a single donor, Zimbabwe appears to have been the favourite of China over the period. A possible explanation for this is found in Zimbabwe's official policy of targeting China as a major donor in an effort to offset the huge funding gap following the suspension of development finance by Western donors. However, looking at total aid flows by all donors into Zimbabwe, it appears Chinese aid has for now failed to completely close the funding gap. For most of the top donors, disbursements are generally significantly lower than commitments. Also, another feature that has emerged is the vast sectors into which aid is going and how the sectors differ across the three countries. Contemporary aid flows therefore seem to differ from aid during previous decades. The health sector, however, seems to be an area where all three countries have received most aid, albeit for different reasons.

²⁰ A number of government agencies have issued new guidelines and recommendations for industrial companies in China and also abroad since 2006. The green credit policy instituted by the China Environmental Policy, for example, created strong incentives which discourage Chinese financial institutions from lending to companies that have a poor environmental record. However, while monitoring in some areas is improving, widespread implementation of these guidelines is still considered weak (Bosshard 2008; Compagnon and Alejandro 2013).

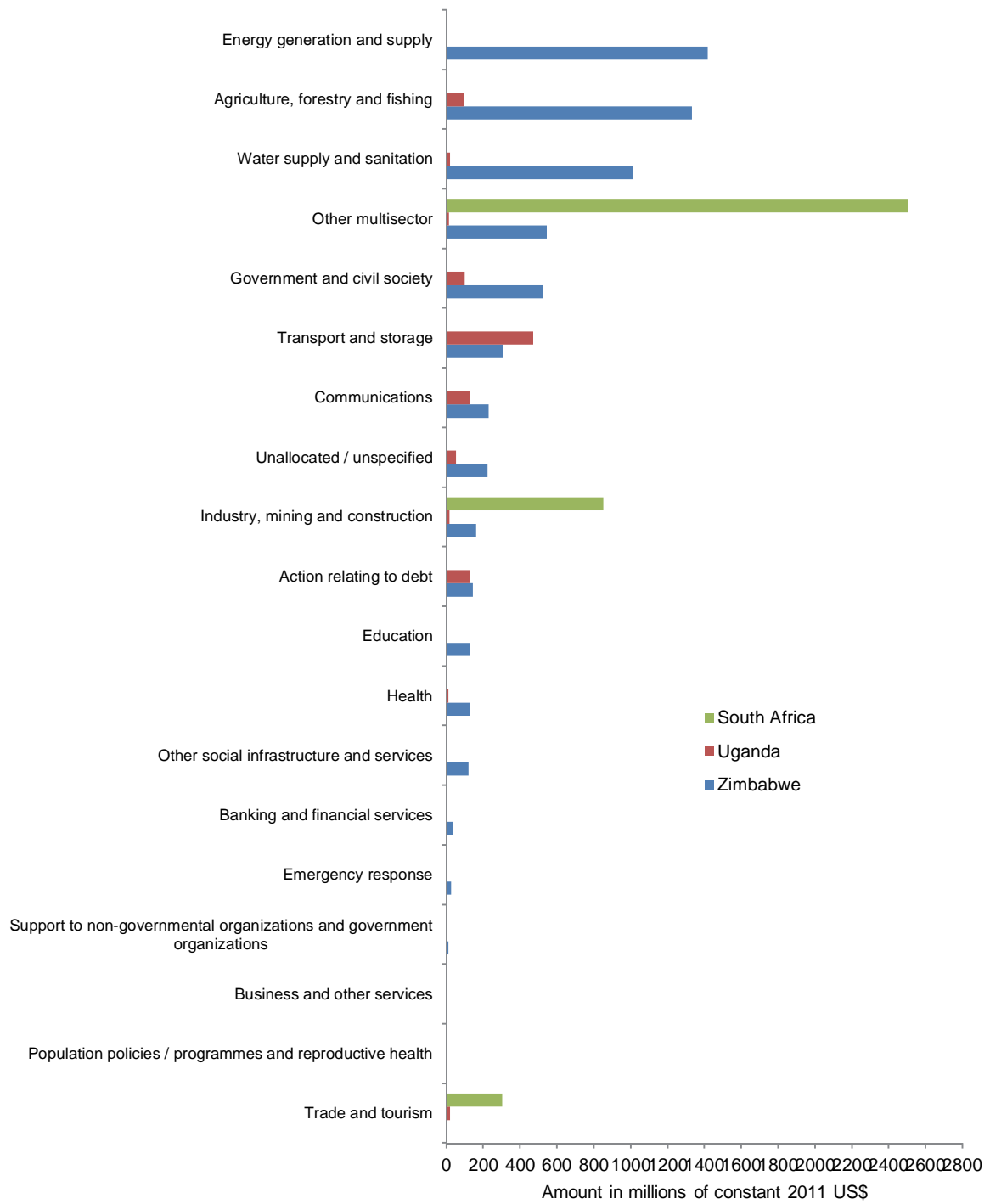
Appendix

Figure 3: Monetary amount of Chinese development finance by sector 2000-11



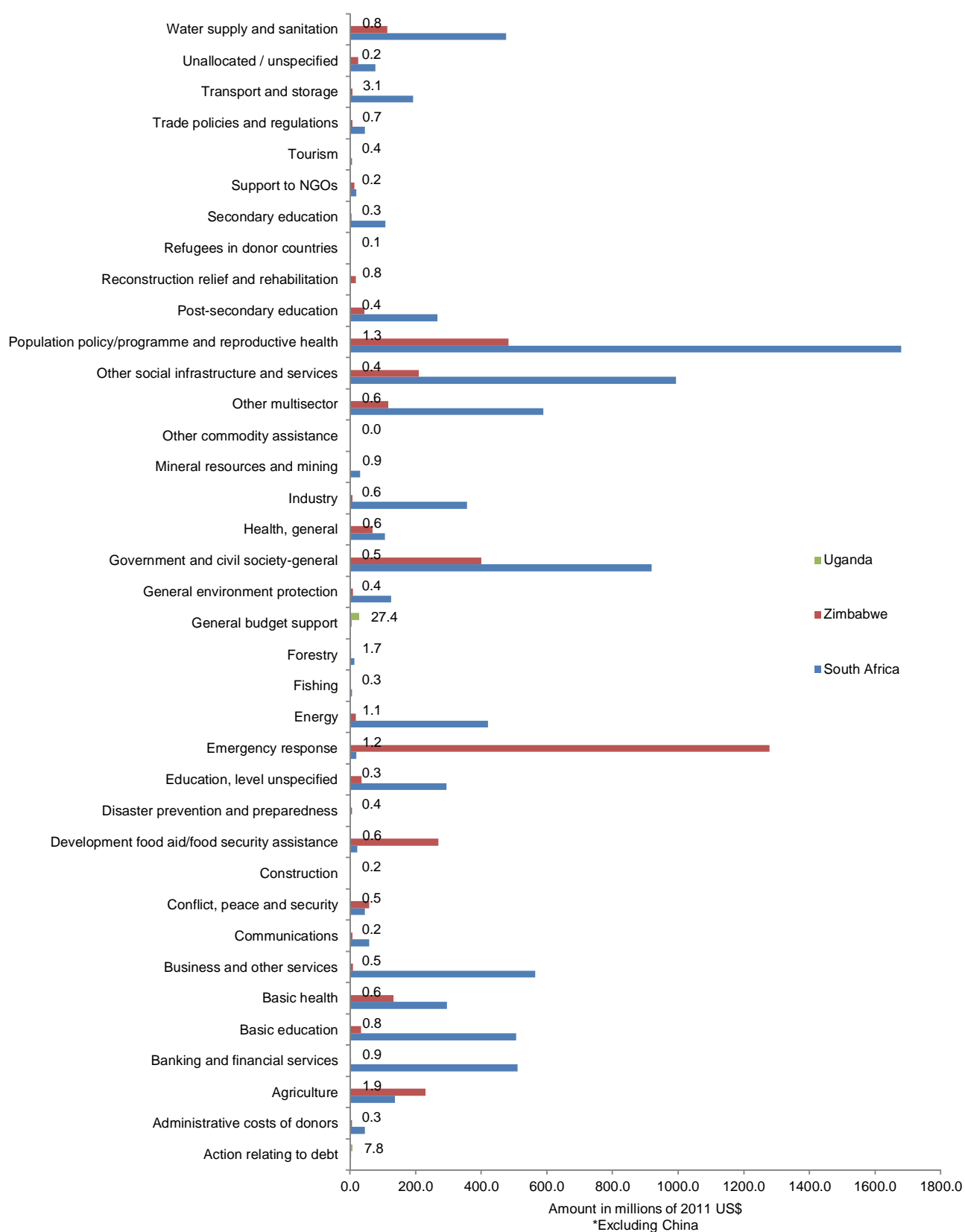
Source: AidData (2013).

Figure 4: Chinese development finance by country 2000-11



Source: AidData (2013).

Figure 5: Development finance commitment by sector 2000-11



Source: AidData (2013).

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