

DISCUSSION DOCUMENT

Tracking Climate Finance Inflows to South Africa

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¹ Trade and Industrial Policy Strategies (TIPS)

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Tracking Climate Finance Inflows to South Africa

Gaylor Montmasson-Clair, Trade and Industrial Policy Strategies (TIPS)³

1. Introduction

The world is currently facing a triple crisis of sustainability (Addison *et al.* 2010). On top of socio-economic issues, such as the global financial crisis, rising inequalities and unemployment, the threat of climate change related to an over-reliance on fossil fuels and the unsustainable (over-)use, depletion and pollution of other natural resources, is potentially pushing the world to levels of dangerous instability. Africa is additionally destabilised by high levels of poverty, unemployment, inequality, disease, corruption, and failures in democratic governance and education.

Many of the problems of the continent are reflected in South Africa, where gains from the rise in commodity prices and debt-fuelled, consumption-led growth have masked issues like rising costs and declining competitiveness of the economy. The 21st century has seen protests over service delivery and unemployment, while (increasingly deracialised) inequality remains stubbornly ingrained in the fabric of society. South Africa is also the 13th largest carbon dioxide emitter in the world, despite the country's relatively small population and economy.

As most part of the continent, South Africa is particularly vulnerable to global warming owing to the low resilience to extreme climate events of a significant part of the population, already low and variable rainfall in large parts of the country, a substantial share of surface water resources being already fully allocated, and the centrality of agriculture and fisheries for food security and local (rural) livelihoods. South Africa will be heavily exposed to amplified water stress, reduced yield from rain-fed agriculture, an increase of arid and semi-arid land, heightened food security issues, and extremely high costs of adaptation, particularly in low-lying coastal areas (DEA 2011b; IPCC 2007).

Domestically, South Africa has nevertheless achieved far-reaching political, economic and social changes since 1994, and has shown an increasing commitment to sustainable development. The country recognises sustainable development as a human right in its 1996 Constitution. In addition, a National Framework for Sustainable Development (NFSD) was adopted in 2008 and a National Strategy on Sustainable Development and Action Plan 2010-2014 (NSSD), building on the NFSD, was published as government policy in November 2011.

At the international level, South Africa has, in line with the positions of the Africa Group and the Group of 77 (G77 and China), subject the country's greenhouse gas (GHG) emissions reduction pledge (peak between 2020 and 2025 at respectively 34% and 42% below a business-as-usual trajectory, plateau for approximately a decade and decline in absolute terms thereafter) to the adequate provision of financial resources, technology transfer and capacity building support provided by developed countries (UNFCCC 2011).

At the 15th Conference of the Parties (COP 15) to the United Nations Framework Convention on Climate Change (UNFCCC) in 2009, developed countries pledged in the Copenhagen Accord to provide 'fast-start finance' to developing countries, i.e. new and additional resources approaching USD 30 billion for the 2010-2012 period, as well as mobilising USD 100 billion annually by 2020 for climate responses in developing countries (UNFCCC 2010). Despite many international initiatives⁴ and the existing obligations under the UNFCCC for developed countries to monitor, report and verify (MRV) aid flows, the extent to which developed countries have been providing sufficient assistance to developing countries remains unclear due to significant gaps in reporting and tracking. Intensive

³ The opinions expressed in this study are from the author and do not necessarily reflect the views of any government, the OECD, IEA, or their member countries.

⁴ In addition to its own endeavour, the Climate Policy Initiative lists 24 existing climate finance tracking databases and initiatives for public finance and 22 for private finance (Buchner *et al.* 2012).

negotiations and efforts have therefore been directed towards measuring, reporting and verifying climate finance outflows from developed countries. However, little attention has been given to the experience of developing countries in tracking climate change-related flows.

This paper conducts a case study focused on the state of the tracking of public and private climate-related inflows to South Africa. Section 2 investigates South Africa's strategy on climate finance (tracking). Section 3 describes South Africa's project-based approach with regards to tracking. Sections 4, 5 and 6 respectively explore what data on public (domestic and foreign) and private climate finance inflows are currently available in South Africa and how information is collected. Section 7 highlights the challenges with regards to tracking climate finance in South Africa and formulates recommendations. Section 8 concludes.

2. South Africa's strategy on climate finance (tracking)

South Africa, which belongs to both the Africa Group and the G77 and China, supports the view that “[d]eveloped country Parties and other developed Parties included in Annex II [...] shall provide substantial, new, additional, adequate, predictable and sustained public funding additional to and different from the official development assistance (ODA) to meet the agreed full costs and/or incremental costs incurred by developing country Parties to effectively implement their commitments under the Convention, taking into consideration that other sources of finance like private sector and carbon market can play a supplementary role” (Africa Group 2009).

The magnitude and allocation of costs associated with mitigating, and adapting to, climate change locally have been investigated by the South African Government. Based on South Africa's Second National Communication under the UNFCCC, estimates for interventions required to reach national commitments in terms of GHG reduction by 2050 range from savings of USD 298 billion (if effective widespread actions are implemented immediately) to a more realistic cost of USD 487 billion (DEA 2011b; Zingel 2011).

The 2011 National Climate Change Response White Paper (hereinafter referred as to the White Paper), informed by the National Climate Change Response Green Paper (hereinafter referred as to the Green Paper) published for consultation in 2010, does address the issue of resource mobilisation. It recognises the need to intensify the country's efforts to create, allocate and mobilise finance for climate change mitigation and adaptation, in addition to international support.

Both the Green and White Papers acknowledge the contribution that the various institutions in the financial system can play in channelling finance. The public sector can support the development of sustainable projects through public procurement programmes and catalytic projects. South African development finance institutions (DFIs)⁵ can factor climate change objectives into their planning and lending portfolios to back climate-resilient projects, and build technical and knowledge capacity. The private sector (private banks, microfinance institutions, asset managers, venture capital and private equity firms, insurers, etc.) can also play a decisive role. Further engagement is nonetheless required in order to ensure informed risk management, and lending and investment decisions (related to both the impact of, and on, climate change), as well as finance availability and mobilisation. In addition, market-based instruments are acknowledged as an adequate medium- to long-term policy response. Finally, international and corporate grant-providers are critical in consolidating financing packages for climate change mitigation and adaptation in the country (DEA 2011a; DEA 2010).

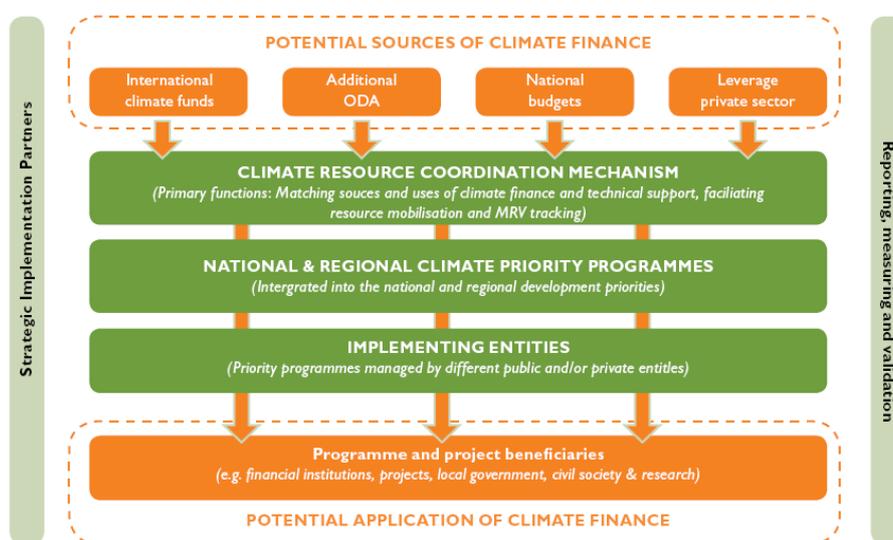
The White Paper correspondingly tasks the National Treasury (NT), the Economic Development Department (EDD) and the Department of Environmental Affairs (DEA) to develop a climate finance strategy and architecture (including policy and financing mechanisms) to achieve South Africa's sustainable development and climate change goals. Public platforms will also be established and/or

⁵ South Africa's DFIs include the Development Bank of Southern Africa (DBSA), the Industrial Development Corporation (IDC), the Land Bank and the Small Enterprise Finance Agency (SEFA).

supported to mobilise and channel climate finance and technology, and to inform decisions on operative risk and investment management. A multi-stakeholder working group shall be appointed within three years (i.e. by October 2014) to oversee the process (DEA 2011a).

In addition, the Green Paper targets the establishment of a National Climate Change Fund (as yet non-existent) to mobilise international and national finance sources for investment in both mitigation and adaptation, and a Climate Finance Tracking Facility (also non-existent as yet) to track both public and private climate finance flows and report on mitigation actions implemented with international support (DEA 2010). In the meantime, the White Paper assigned the NT to identify the custodian of an interim climate finance coordination mechanism to mobilise financial resources (grants, concessionary debt and risk insurance products) for South Africa’s climate change-related activities and track the use and impact of channelled funds (DEA 2011a). The DEA is currently working with the NT to design and implement the climate finance coordination mechanism announced in the White Paper. Initial discussions are taking place to determine the purpose and the goal that such a facility should achieve.⁶

Figure 1: Climate finance coordination prototype for South Africa



Source: Naidoo 2011

The Development Bank of Southern Africa (DBSA) has conducted extensive background research on behalf of the DEA on the most effective setup and structure of such a climate coordination mechanism (Naidoo 2012; Naidoo 2011). The DBSA proposes a flexible mechanism, including a tracking facility, to support resource mobilisation in the country and facilitate both the country’s climate change response and, infrastructure and industrial development. As illustrated in Figure 1, DBSA’s proposal aims at fostering ownership through a more country-driven investment programme increasing integration (and bringing gaps) between sources of climate finance and technical support, and South Africa’s national climate response programmes such as water, energy, and transport. It also intends to strengthen clarity and transparency thanks to the implementation (by way of MRV tracking) of performance-based monitoring, evaluation and support and further cooperation and partnerships between all stakeholders. This would in turn amplify the impact of climate finance, technical assistance and technology transfer owing a better allocation (and absorption capacity) of resources and institutional strengthening (Naidoo 2012; Naidoo 2011). Further work is currently undertaken by the international consulting company Camco Clean Energy for the DEA and the NT in this respect.⁷

⁶ Interview with officials from the DEA and the NT.

⁷ Interview with officials from the DBSA, the DEA and the NT.

Despite these initial reflexions, South Africa lacks at this time a clear, structured and practical strategy on, and institutional arrangements for, climate finance (tracking). No funding gap has been determined and no official estimates of the expected or required contribution of public, private and donor finance is yet available. In addition, the rationale for, and practicalities of, these institutional arrangements remain unclear. As yet, there is no overarching framework coordinating and managing the strategic use of available funding to ensure it is utilised in the most efficient manner. An overseeing mechanism or entity is considered a prerequisite for funding to be matched efficiently with South Africa's environmental priorities and relevant projects according to their respective characteristics, and bundle finance from diverse sources to fund interventions (Cloete *et al.* 2011).

Similarly, while the Department of Performance Monitoring and Evaluation (DPME) does include the environment as one of 12 priority 'outcome' areas targeted under a comprehensive national monitoring and evaluation system, the 12 Outcomes Framework, it does not address the issue of climate finance.⁸ The framework includes numerous specific climate change-related actions, such as, *inter alia*, reducing greenhouse gas emissions, increasing energy efficiency, fostering renewable energy and adapting to climate change. However, funding mechanisms, and notably the monitoring and evaluation of finance flows, are not tackled in the framework (DEA *n.d.*; DPME 2010).

Despite missing an overall strategy on climate finance, South Africa is implementing a researched, reflective and innovative framework for the sustainable and affordable development and financing of renewable energy in the country. The Department of Energy (DoE), with the support of the NT, has embarked upon the creation of an enabling environment conducive for private sector investment in the energy sector as well as the procurement of renewable energy from independent power producers (IPPs). The Renewable Energy Independent Power Producer Procurement Programme was launched in August 2011 by the DoE.⁹ It aims at commissioning a total of 3 625 MW of generation capacity by 2030 through five procurement rounds. This is in line with the Integrated Resource Plan 2010-2030 (IRP) and is one of the largest single instances of public sector renewable energy procurement in the world to date.¹⁰

On the sidelines of the 17th Conference of the Parties (COP 17) to the UNFCCC in Durban, South Africa in 2011, the South African Government launched the South African Renewables initiative (SARi) as part of the country's Industrial Policy Action Plan (IPAP) and in support of the IRP. SARi aims at providing "a means for mobilising and channelling international public finance into the development of renewables capacity and the delivery of green energy. The overall vision is for a strategic, large-scale, and competitive procurement of renewable energy, enabled by domestic institutional de-risking, and the provision of low cost loans and risk guarantee instruments from international sources, to be combined with modest amounts of domestic funds and international public grants, to cover the remaining incremental costs" (DTI & DoE 2011). Four European countries (namely the United Kingdom, Norway, Germany and Denmark) and the European Investment Bank (EIB) joined the South African Government to initiate a SARi international partnership, which targets the development of arrangements to provide financial instruments and resources to secure long-term funding for the development of the country's renewable energy industry, as well as a technical assistance and experience sharing.

⁸ This framework, which identifies the goals to reach, the means to achieve them, and the tools to assess progress, determines 12 outcomes (system-wide results) covering all spheres of sustainable development (education, health, safety and security, employment, skills, infrastructure, rural development, human settlement, local government, environment, international relations, and public service) and reflecting the desired development impacts that the government seeks to achieve. Each outcome is clearly articulated with key activities, measurable outputs and sub-outputs and a large set of indicators and targets for 2014/2015 (DEA *n.d.*; DPME 2010).

⁹ See the Renewable Energy Independent Power Producer Procurement Programme website for more information, <http://www.ipprenewables.co.za>.

¹⁰ The South African IRP, promulgated in May 2011 by the DoE, calls for an 18 GW renewable energy programme over the next 20 years.

As part of the financing leg of the SARI, the NT¹¹ is currently developing a Renewable Energy Fund that will combine fiscal, concessional and commercial funding to provide cheaper finance and project preparation technical assistance to renewable energy IPPs. The facility intends to lower the cost¹² and impact of renewable energy on the economy by leveraging private sector investment with more affordable climate change donor and concessionary funding under the supervision of the NT and other relevant departments (DoE *et al.* 2012; Hemraj 2012b). The NT is engaging in consultations with the DBSA on the establishment of the fund which will support the IPP procurement process overseen by the DoE (Hemraj 2012b).

3. The project-based approach of the Department of Environmental Affairs

Climate change-related actions involve a large number of stakeholders and are carried out and financed by a diversity of institutions, such as all spheres of government, research institutions, business and industry, and non-governmental organisations (NGOs). In addition, climate change response interventions are extremely diverse, ranging from research, policies, strategies, action plans, legislation and regulation to practical mitigation and response projects.

Information on climate change-related activities is by nature scattered and therefore diverse in its basis for reporting and level of detail, as well as time-consuming to obtain, rendering the knowledge and understanding of the 'big picture' (notably in terms of impact) extremely challenging. This has resulted in wasteful (sometime multiple) duplication of efforts and inefficient use of human, financial and technical resources. The lack of monitoring and evaluation of relevant projects and programmes has limited the positive impacts in terms of climate change mitigation and adaptation as well as skills, knowledge and technology transfer. Learning processes (through the identification of best practices and replicable pilot projects) and institutional and personal build-up (through partnership, networking and interrelationship opportunities) have also been hindered by the lack of comprehensive information on climate change-related activities. In the end, the absence of reliable knowledge has had detrimental consequences and hampered the implementation of an efficient, effective, integrated and cohesive climate change response in South Africa (Dlamini 2009).

In order to address this gap, the DEA has adopted a project-based approach which diverges from traditional climate finance tracking initiatives. Building on an early simple database of known interventions and on the experience acquired in this original exercise, the then-Department of Environmental Affairs and Tourism (DEAT) developed in 2008-2009 a National Climate Change Response Database (NCCRD). The database was designed as an electronic, web-based, information management system that would efficiently and effectively collect, collate, store, sort, analyse and report information relating to significant South African climate change response interventions from 1 January 2000. Collected information on projects included *inter alia* project description, timelines, budgets, targeted groups, location, funding organisation, host organisation, lead partner, type of intervention (research or project, mitigation or adaptation) and contact information.

In July 2009, the database, which allowed the public to easily register new projects online, gathered information on 90 projects, most of them mitigation interventions located in the provinces of Gauteng and Western Cape. The database was further bolstered in 2009 with 180 further projects from a broader additional database by Faure as part of an independent unrelated study aimed at stocktaking donor funding in South Africa¹³ (Faure 2009). The lack of data, particularly for emissions reductions

¹¹ Given the NT's mandate to oversee national public finance arrangements, including those related to ODA (through the International Development Cooperation Chief Directorate), the department is best placed to coordinate the establishment of a conduit to channel possible foreign donor assistance and concessionary finance contributions into a central facility capable of disbursing funds at concessional rates as well as to ensure the optimisation of such funds (DoE *et al.* 2012).

¹² Since the IPP procurement programme is based on competitive bidding, the benefits of cheaper renewable energy finance, through an instrument like SARI, would be passed on to consumers.

¹³ See Section 5 below for more information on Faure's database.

(only 28 out of 59 mitigation projects reported emissions data), has prevented the DEA from properly estimating the impact of projects on the ground (Dlamini 2009). Owing to the lack of funding and institutional capacity, the database was unfortunately left in disarray and is no longer accessible online.

Building on the previous 2009 version, the DEA is currently implementing a new database of all climate change-related projects and programmes taking place in South Africa.¹⁴ The database will be finalised in March 2013 (and operational in April 2013) and continuously updated over time. It focuses on the output of climate finance by stocktaking all projects and programmes occurring in South Africa that yield a positive impact on climate change mitigation and adaptation. In order to be as comprehensive as possible, the database does cover all projects, including those that are not directly climate change-related but still deliver progress with regards to mitigation and adaptation. The 'Working for Water' programme run by the Department of Water Affairs is one such example.¹⁵

While the purpose of the database is to assess the impact of climate actions (such as the volume of GHGs mitigated by a project or the degree of resilience of a community increased by an action), all climate change-related activities are included in the database with information on financiers (government, private sector, NGOs, etc.), sector, location, duration, cost and impacts. As for all database, the quality of the information is subject to the cooperation of implementing entities. While government departments at all levels (national, provincial and local) and NGOs have been collaborating willingly with the DEA, the private sector has demonstrated a certain reluctance in sharing and divulging relevant information and further efforts are required to secure buy-in and obtain comprehensive information.

Once released, the database will give an idea of the finance currently mobilised for climate change-related activities in South Africa, even though it is not its main purpose. However, the questionnaire does not enquire about the additionality of projects as the DEA is more interested in the final on-the-ground impact of actions. Additionality (or the share of the funding that could be qualified as additional) is also very hard to establish, particularly in a questionnaire. Data would be hardly comparable due to respondents' variable interpretation and knowledge about the additionality of projects.

4. South Africa's public climate expenditures

Substantial public funding has been earmarked for climate change-related actions at the domestic level. However, there is no systemic tracking of domestic public finance in South Africa. Governmental budgets at all levels are reported by department, and environmental or climate change-related projects are not specifically earmarked. Likewise, when sectorally reported in NT documents, 'environmental protection' is coupled with 'economic services', which makes it difficult to analyse.

The NT is currently setting up a database gathering all governmental climate change and environmental funding. The databank, for internal use only, will allow the NT to monitor more effectively public environmental expenditures with the goals of ameliorating spending patterns and evaluating requirements for public finance in the sector.¹⁶ Preliminary work has estimated current climate change and environmentally-related programmes funded on the national budget (i.e. not taking into account expenditures at the provincial and municipal levels) at ZAR 14.7 billion (USD 1.6 billion) for 2012/2013, primarily in transport, water and sanitation, and energy (Hemraj 2012b; Hemraj 2012a). The DBSA, based on different definition and categorisation, estimates that

¹⁴ Interview with officials from the DEA.

¹⁵ While the main goal of the programme to provide jobs and training in marginalised communities through clearing invasive alien plants, it is also globally recognised as one of the most outstanding environmental conversation initiatives on the continent.

¹⁶ Interview with officials from the NT.

South Africa's national budget directly allocates around ZAR 18.7 billion (USD 2.1 billion) for environmental projects in 2012/2013, essentially in energy and environmental protection (Naidoo 2012) (see Table 1 for a more detailed comparison between the two estimates).

Table 1: Comparison of estimates for environmental expenditures in the South African national budget by the NT and the DBSA (in million ZAR)

Estimates from the NT		Estimates from the DBSA	
Transport	4 988	Energy	7 480
Water and sanitation	3 736	Environmental protection	6 720
Energy	3 231	Environment	3 435
Environment	1 740	Agriculture, forestries and fisheries	760
Disaster management	510	National Green Fund	300
Biodiversity	486		
Climate change programmes	31		
Total	14 722	Total	18 695

Source: Author's representation based on Hemraj 2012a; Hemraj 2012b and Naidoo 2012

The DEA budget, amounting ZAR 4 512.2 million (USD 496 million) in 2012/2013, is the first stop when looking at public climate finance in South Africa. As illustrated in Table 2, the budget of the department highly emphasises sustainable development actions over policy and regulation (essentially composed of 'environmental quality and protection', 'oceans and coasts' and 'climate change') 'Environmental sector programmes and projects', which covers *inter alia* infrastructure investments, natural resources management and a newly-created Green Fund,¹⁷ and 'biodiversity and conservation', which includes national parks and protection areas, account for more than two-thirds of the budget allocation (NT 2012a). In 2011, ZAR 200 million (USD 22 million) were additionally allocated to the organisation of COP 17 in Durban, South Africa.

Table 2: Annual budget of the DEA from 2012-2015 (in million ZAR)

	2012/2013	2013/2014	2014/2015
Administration	775.5	725.5	610.5
Environmental quality and protection	323.3	345.7	366.2
Oceans and coasts	221.8	239.9	254.4
Climate change	31.2	33.0	35.0
Biodiversity and conservation	486.4	511.4	541.6
Environmental sector programmes and projects	2 674.0	3 319.8	3 315.4
Total	4 512.2	5 175.3	5 123.1

Source: Author's representation based on NT 2012a

The budget of the DEA does however not encompass all the country's environmental expenditures, as suggested by the initial work of the NT and the DBSA. Several departments, such as the DoE and the Department of Agriculture, Forestry and Fisheries (DAFF), also directly finance environmental projects.

¹⁷ In 2012, the DEA started a ZAR 800-million (USD 88 million) national Green Fund administered by the DBSA. The Green Fund aims to provide "catalytic finance to facilitate investment in green initiatives that will support South Africa's transition towards a green economy" (DEA & DBSA 2012a). The Green Fund will support project development and/or investment in green projects and programmes, capacity building, and research and policy development in three funding windows, namely green cities and towns, low carbon economy (cleaner production and energy efficiency) and natural resource management (biodiversity protection and ecosystem services management). In the first of the three rounds for funding proposal closed in October 2012, the Green Fund received a total of 590 applications, totalling ZAR 10.9 billion (USD 1.2 billion) (DEA & DBSA 2012b). While the outcome of the first is still pending, a second round was opened in February 2013.

In addition, South Africa's main DFIs, the Industrial Development Corporation (IDC) and the DBSA, have both committed to providing significant finance to climate change mitigation and adaptation projects over the next few years.

The IDC aims at financing 'green industries' for a total of ZAR 25 billion (USD 2.8 billion) over the 2011/2012-2014/2015 period (IDC 2012). For example, the IDC has played an active role, as a development partner and financier, in the country's Renewable Energy Independent Power Producer Procurement Programme. Through the first two phases in 2011 and 2012, the IDC has committed a total of ZAR 7.5 billion (USD 0.8 billion) towards selected projects (IDC 2012). The IDC also launched in 2011 the Green Energy Efficiency Fund (GEEF)¹⁸ aimed at promoting energy efficiency and small-scale renewable energy projects in South Africa. Financed in partnership with the German Development Bank (KfW), the ZAR 500-million (USD 55 million) facility provides concessional loans and free technical support to eligible companies (e.g. energy assessment) (IDC 2012).

The DBSA has likewise committed to unlock around ZAR 20-30 billion (USD 2.2-3.3 billion) for green energy projects over the 2011-2015 period (Creamer 2010). Like the IDC, the DBSA granted loan facilities for projects under the Renewable Energy Independent Power Producer Procurement Programme for a total of ZAR 6.2 billion (USD 0.7 billion) in the first bid window (Vermeulen 2012).

Lastly, significant funding is both indirectly allocated towards the transition to a green economy. South Africa's green economy framework includes numerous schemes and incentives (such as tax and fiscal stimuli, taxes, rebates, standards, etc.) aimed at fostering the country's shift to sustainable development in sectors as diversified as *inter alia* waste management, biodiversity, energy efficiency (standards in particular), renewable energy, solar water heating, water conservation and demand management and public transport. Substantial climate finance is also mobilised at the provincial and municipal levels, where project implementation occurs (Faure 2009; Hemraj 2012a; Montmasson-Clair 2012).

5. Foreign public (donor) finance in South Africa

In addition to South Africa's Government, international and bilateral donors are very active in the country with regards to climate change. However, the management of donor funding is not centralised in South Africa, resulting in difficulties in tracking. Each department, province or municipality obtains individual funding for its own climate change-related projects. Information on donor funding can only be accessed at respective departments and not in a central repository. According to the NT's Medium Term Expenditure Framework (MTEF) guidelines, "[a]ll institutions should provide a comprehensive schedule of all donor funding by programme or objective/activity and economic classification over the seven-year period, a brief description of what the funds will achieve (outputs) and the associated timelines" (NT 2012b). The NT, which manages reported ODA through the Reconstruction and Development Programme Fund of its International Development Cooperation Chief Directorate, yet acknowledges that substantial improvements are still to be made in this respect (NT 2012b). In addition, ODA only plays a 'supplementary' role in South Africa as it accounts for far less than 1% of the national budget.

International aid is nonetheless used to leverage the country's own resources more effectively and foster strategic partnerships on knowledge and technology transfer, best practices and upstream policy changes (Zingel 2011). An example of the most efficient use of donor funding to leverage additional finance from private and public sector actors is the financial assistance provided by European donors (around ZAR 30 million (USD 3.3 million)) in support of hiring a team of transaction advisors for the development in 2011 of the IPP procurement programme, which mobilised, in turn, tens of billions of rand in loans for, and investments, in renewable energy.

¹⁸ See the Green Energy Efficiency Fund website for more information, <http://idc.co.za/development-funds/geef>.

With regards to climate finance, only funds made available through the Global Environmental Facility (GEF) are centrally managed by the DEA. Once funding has been secured, GEF funding is channelled to implementing departments through the NT, which also monitors that money is spent in line with funding agreements. The GEF has allocated USD 52.6 million to South Africa for projects in biodiversity, climate change and land degradation for the June 2010-2014 period. As of June 2012, only USD 15.5 million had however been utilised, essentially in biodiversity-related projects (GEF, 2012).

There is no systemic tracking of foreign public climate finance flows in the country. In a once-off initiative, the DBSA has however tentatively recorded climate change-related donor (multilateral and bilateral) finance received by South Africa from 2003-2010. Data were collated from initial work carried out by the World Bank and the NT and were complemented by extensive desktop research and engagement with relevant stakeholders in South Africa (such as donors).¹⁹

The database gathers substantial information on every project, such as its nature (mitigation and/or adaptation, renewable energy and/or energy efficiency), its timeframe, its status (under development, operational, complete) and its implementing agency. Information on the origin (country, fund) and nature (grant, concessional loan, private loan, etc.) of the funding were also collected. However, a large part of projects has missing information for one or more categories, particularly with regards to co-financing. In addition, financial packages often cover several years, making the analysis of yearly funding difficult.

According to the DBSA database, public funders (donors, funds, multilateral institutions, philanthropic organisations) have financed 95 projects and programmes from 2003-2010 for an estimated total of ZAR 20.1 billion (USD 2.2 billion). France, Germany, multilateral funds (essentially the Clean Technology Fund (CTF)²⁰ and the GEF) and Australia appear to be the largest funders in South Africa. In line with international tendencies, a substantial share of donor funding is provided through loan (concessional for the most part) rather than grants. For example, the French Development Agency (AFD) provides a concessional loan support mechanism of EUR 120 million for a Green Credit Line to ABSA and Nedbank, two of the leading South Africa's private banks, and the IDC to finance renewable energy and energy efficiency projects (AFD 2011).

Donor-funded projects are primarily implemented by public corporations (such as Eskom, South Africa's electricity public utility, and the Central Energy Fund (CEF))²¹ and municipalities (mainly the large metropolitan areas of Cape Town, eThekweni and Johannesburg). Altogether, a high number of entities are seen implementing climate change-related projects, confirming that climate finance flows are strongly decentralised (Cloete *et al.* 2011).

Despite the establishment in late 2008 of the Climate Change Development Partners Working Group by several donors, little coordination between funders and with government is taking place. The Group is intended as an informal meeting between a number of funders to discuss their respective

¹⁹ Interview with officials from the DBSA.

²⁰ The World Bank's CTF has earmarked a total of USD 500 million for South Africa. The CTF has granted low-cost loans to South Africa to the amount of USD 450 million. The CTF approved a USD 350-million loan to Eskom to develop a concentrated solar power plant and a wind power plant, a USD 85-million facility to the South African Sustainable Energy Acceleration Programme aimed at kick-starting green energy procurement in the country, and US 15 million to a programme aimed at encouraging the transformation of the energy efficiency sector by establishing a source of funding for on-lending by financial institutions to small- and medium-sized industrial operations for investments in energy efficient equipment. CTF financing is expected to mobilise around USD 3.42 billion in additional public and private financing for projects to support South Africa's progress toward equitable and sustainable economic growth (CIF 2012).

²¹ The DoE-controlled CEF, which is made up of 10 operating subsidiaries, operates in the energy sector and manages defined energy interests with commercial, strategic, licensing, and developmental roles on behalf of the South African Government, and more recently, with a special focus on renewable and cleaner alternative energy sources (DoE, 2012). It channels grants and loans from international development partners including the United States of America, Norway, Germany and Denmark. To date, projects include a mini-hydro scheme, a solar water heater scheme and the Darling Wind Farm (DTI and DoE, 2011).

climate change programmes (Faure 2009). Concerns have been raised about the alignment of donors' activities with South Africa's priorities. For example, while improving energy efficiency has been clearly identified as one of South Africa's main objectives,²² only 2% of donor funding in 2009 in the area of climate change was targeted exclusively at energy efficiency (51% of projects however focus both on energy efficiency and renewable energy). In addition, only one project directly focused on industrial energy efficiency, in dire contrast with the perception as this area as a low-hanging fruit in South Africa (Faure 2009; Zingel 2011).

As of July 2009, Faure (Faure 2009) found that there were at least 33 different development agencies financing (or preparing) 99 climate change-related projects or programmes in South Africa. In total, donors support accounted for approximately ZAR 12.1 billion (USD 1.3 billion), divided between ZAR 2.9 billion (USD 0.3 billion) in grants and ZAR 9.2 billion in loans (USD 1.0 billion) (almost entirely for renewable energy and energy efficiency projects). The CTF, France and Germany financed more than three-quarter of those projects. About 86% of projects focused on mitigation actions (i.e. renewable energy, energy efficiency or both).

Municipalities only received 14% of donor funding in 2009 despite their prime role in project facilitation and implementation. In addition, large metropolitan areas (eThekweni, Cape Town, and Johannesburg) gathered most of the funding. One example is the relationship that the City of Johannesburg (CoJ) has developed with the Clinton Climate Initiative (CCI), a partnership between the Clinton Foundation and the Large Cities Climate Leadership Group (known as C40) to which Johannesburg belongs to. The CCI is providing technical assistance (energy efficient procurement, information support on technology and products, financial and cost analysis, waste management, public building retrofitting, solar street lighting) with regards to the implementation of the city's energy efficiency programme. Johannesburg also obtained grant assistance from the initiative to develop the design and operational plan for the Rea Vaya Bus Rapid Transport system, and to hire a climate change and cleaner production deputy director (CoJ 2007).

6. Private climate finance in South Africa

South Africa possesses a developed, stable and well-regulated financial sector. Main South African financial institutions, particularly banking and insurance companies, are extremely profitable and the Johannesburg Stock Exchange (JSE), with a total capitalisation of about USD 900 billion, is ranked 17th in the world.

Financial institutions, including banks, insurers, venture capital, private equity and hedge funds, have been increasingly active in low-carbon project and company development in South Africa. The emergence and development of new climate change-related technologies, notably in the fields of renewable energy and energy efficiency, coupled with the introduction of appropriate incentive and support governmental schemes, has recently increased green investment opportunities. The favourable investment market, associated with positive risk/return profiles, has paved the way for commercial opportunities (Camco & TIPS 2010).

In addition, a growing body of banks and investors are increasingly concerned about the climate change liabilities associated with companies' activities and investments. The most well-known initiative in this regard is the investor-led Carbon Disclosure Project (CDP). The South African leg of the CDP, led by the National Business Initiative (NBI), strongly promotes investments in climate change mitigation and adaptation. In 2012, 78% of the 100 largest South African companies by market capitalisation reported on their GHG emissions (Camco & TIPS 2010; Incite Sustainability & NBI 2012; Zingel 2011).

²² See, for example, South Africa's Long-Term Mitigation Strategies, New Growth Path, IPAP, and National Development Plan.

The South African Government is not directly working on tracking private climate finance flows and there is no systematic tracking in place in the country. In a once-off exercise in 2010, the DBSA however gathered available information on private climate finance in South Africa with the aim of giving an idea of the minimum flows taking place in the country. Faced with extreme reluctance from the private sector to disclose information, the DBSA collected publicly available data on climate change-related funds, deals, commitments and projects from private entities (banks, insurers, financial institutions, microfinance institutions, private companies, etc.). According to data collated by the DBSA, private equity funds available for climate finance in South Africa are estimated at ZAR 3-5 billion (USD 0.3-0.5 billion) (Cloete *et al.* 2011). Table 3 lists some of climate change-related funds available in the country.

Considering renewable energy only, at least USD 4.12 billion were also available from commercial banks as of July 2012 (Naidoo 2012). For example, Standard Bank, the leading South African bank in terms of assets, has agreed to underwrite more than ZAR 27 billion (USD 3.0 billion) in renewable energy projects for preferred bidders in the first two phases of the IPP programme. In the second round only, Standard Bank agreed to provide debt underwriting for wind and photovoltaic projects of a combined power-generating capacity amounting to 1 454 MW (Cooke 2012).

Table 3: Examples of South African private equity funds targeting low-carbon projects

Fund	Targeted fund size	Targeted sectors	Status of the fund
Inspired Evolution Fund	ZAR 1 billion	Clean energy generation, energy storage, energy efficiency, cleaner production, water quality and management, waste management	Fundraising
Lereko Metier Sustainable Capital Fund	ZAR 250 million	Renewable energy, waste, energy efficiency, bio-energy and co-generation	Fundraising
Merchantec Carbon Fund	ZAR 1 billion	Renewable energy, carbon credits, low-carbon industrial development	Fundraising

Source: Author's representation based on Cloete *et al.* 2011

Similarly, market-based financial flows directed at climate change-related interventions are not systematically tracked in the country. Climate finance resulting from operations on the local bond market is nevertheless easily identifiable due to the limited number of deals. In April 2012, the IDC issued a ZAR 5-billion (USD 0.5 billion) green bond aimed at facilitating funding for businesses looking to invest in clean-energy infrastructure developments, a first in South Africa. The 14-year bond, issued in tranches depending on the project pipeline and uptake with ZAR 500 million (USD 55 million) earmarked as the initial tranche, has been fully taken up by the Public Investment Corporation (PIC) (Ensor 2012; Engineering News 2012).²³ In July 2012, Nedbank, South Africa's fourth largest banking group in terms of assets, announced a green savings bond programme aimed at South Africa's investors. The bank intends to raise a minimum of ZAR 4 billion (USD 0.4 billion) with the initial tranche (Kidney 2012; Ndzabela 2012).²⁴

No particular tracking has been established locally for market-based mechanisms part of the climate regime, despite South Africa benefiting from the CDM as a Party to the Kyoto Protocol and a developing country. The CDM is overseen by the Designated National Authority (DNA) within the

²³ The PIC, which invests on behalf of the Government Employees Pension Fund (GEPF) and the Unemployment Insurance Fund (UIF) among others, had ZAR 1.17 trillion (USD 129 billion) in assets under management as of 31 March 2012 (PIC 2012). The GEPF and UIF respectively accounted for 89% and 6% of PIC's assets under management as of 31 March 2012. The decision mainly stems from the GEPF's Developmental Investment Policy launched in April 2011 which makes provision for 5% of its portfolio to be invested in "economic and social infrastructure projects, the green economy and initiatives aimed at job creation, enterprise development and broad-based black economic empowerment (BBBEE)" (GEPF 2012).

²⁴ Based on an 'asset-linked' model similar to the World Bank Green Bond, Nedbank's product assures investors that funds are directed to climate change-related projects (essentially renewable energy), while return is guaranteed by the bank. Bonds are targeted at retail clients and allow fixed-term investments (from 18-60 months with interest rates comparable to NT's retail savings bond)²⁴ from as little as ZAR 1 000 (USD 110).

DoE²⁵ but information on CDM projects in the country can only be obtained from international sources. According to the United Nations Environment Programme (UNEP), the number of registered CDM projects in South Africa has remained limited with a total of 30 projects as of 1 February 2013. Forty other projects are at the validation stage and 12 currently in registration. Present 82 projects would account for an installed capacity of 3 031 MW (UNEP Risø Centre 2013).

With regards to foreign direct investments (FDI), the South African Reserve Bank (SARB) does track and report South Africa's FDI stocks (both liabilities and assets)²⁶ on an annual basis. However, data are not disaggregated at the sectoral level (with the exception of the banking sector) and do not allow to identify FDI related to climate change or environmental projects.

7. Challenges and recommendations

The fundamental challenges for robust tracking of climate finance lie at the nexus of political and technical issues.²⁷ Many political questions regarding what financial flows (e.g. questions on additionality, and relevant private flows and activities) could count towards developed countries' USD 100-billion commitment remain open. These political questions are intertwined with complex data issues, related to the availability and levels of disaggregation at both the geographical and sectoral levels. While international issues related to setting up a climate finance tracking system are well understood (Clapp *et al.* 2012), challenges proper to tracking flows at the receiving (developing) country level have been neglected. In addition to international issues and the definitional debates around climate finance, many other challenges remain with regards to tracking flows in South Africa.

The articulation and cooperation between funders and receiving entities, to ensure that funding meets South Africa's requirements and priorities remain problematic and must be addressed. Common frameworks need to be set up to identify the country's detailed resources needs, existing financing gaps and ring-fence funding in the most efficient and effective pattern possible. A structured support and distribution of both domestic and foreign funding must be implemented to ensure maximum cohesion, complementarity and leverage power (Naidoo 2012). For example, South African municipalities have not been sufficiently supported by donors. Local authorities are principal agents with regards to both climate change mitigation and adaptation, and require funding as well as technical and knowledge support, training and capacity building to formulate strategies and action plans, implement projects, support local research and institutional capacity and disseminate scientific and technical knowledge. The uncertainty generated by insufficient information on climate impacts is indeed one of the main impediments to municipal actions on climate change (Faure 2009). Further cooperation would also help reduce the suspicion and reluctance of some information holders to participate in tracking initiatives, as experienced by the DEA (Dlamini 2009).

The DEA and development partners constructively engaged on this issue during the drafting of the White Paper. Key outcomes from the discussion highlighted that the consistent implementation of the White Paper requires a long-term framework for institutional mitigation and adaptation actions and implementation, MRV of climate change-related actions and efforts for further research, development and technology innovation and promotion. Development partners emphasised their need for clarity on the implementation of flagship programmes and the DEA agreed to engage further. Consideration was given to centralised donor coordination on climate finance and funded projects and programmes, based on the ODA model. For tracking purposes, climate finance flows could temporarily be channelled through the NT's Reconstruction and Development Programme Fund before a dedicated mechanism is established (Hemraj 2012c).

²⁵ The DNA is one of the requirements for participation in the CDM. It is responsible for authorising and approving participation in CDM projects. The main task of the DNA is to assess potential CDM projects to determine whether they will assist the host country in achieving its sustainable development goals (DoE *n.d.*; UNFCCC *n.d.*).

²⁶ The SARB does not however report data on FDI inflows and outflows.

²⁷ See (Buchner, Brown, *et al.* 2011; Buchner, Falconer, *et al.* 2011; Buchner *et al.* 2012) for more information on these issues.

Counting climate finance, and particularly private flows, is extremely difficult owing to the multitude of stakeholders and channels.²⁸ Information is difficult to locate, occasionally of a commercially-sensitive nature and often incomplete. For example, donors often engage directly with intermediaries and domestic partners (like NGOs) and do not always channel funds through national or government structures. Likewise, private funders generally bypass government structures and operate independently. When reported, climate finance is in most cases in aggregate, which raises issues linked to potential miscalculation and double counting. Currency challenges and substantial differences between pledged, committed and disbursed funding are also adding to the complexity (Naidoo 2012). The reluctance of some stakeholders, mainly in the private sector, to release adequate information, can also lead to the misrepresentation of flows and projects (Dlamini 2009).

The degree of sophistication of tracking systems required at the country level to properly report climate finance appears exceptionally complex relative to the suite of instruments (grants, loans, guarantees, technology transfer, etc.) and stakeholders (governments, financial institutions, project developers, NGOs, etc.). For example, tracking concessionary support that is effectively ‘passed through’ to on-the-ground projects by banks and intermediaries is challenging in South Africa. Concessionary funding is normally granted to financial institutions which use it as a risk management tool and does not directly benefit projects (Naidoo 2012). The high degree of sophistication required implies that tracking climate finance (and maintaining the information as comprehensive and up-to-date as possible) is extremely time- and labour-intensive (Dlamini 2009).

Like the volume and value of financial flows, the on-the-ground impact of climate finance remains grossly unknown in South Africa. The difficulty in assessing the utility value of grants (e.g. pilot studies) in delivering sustainable outcomes is one illustration of the many obstacles. The role of donor funds at project level in leveraging additional (private) resources also keeps being misinterpreted. While the new DEA database will help address and contribute towards a better understanding of the impacts of climate finance, further work will be required to fully grasp the complexity of the matter.

8. Conclusion

As illustrated in this paper, tracking climate finance flows is an incredibly difficult endeavour at both the global and local levels and will require the cooperation of all relevant stakeholders in both developed and developing countries. Much of the attention has been directed to the political debates in the climate regime and the challenges faced by tracking outflows from developed economies. Little consideration has however been given to the situation in developing and emerging economies like South Africa.

In order to engage meaningfully in both the political and technical discussions around climate finance (tracking), many developing countries have been working on tracking flows in their respective country. While South Africa have not yet established a comprehensive national climate finance tracking facility, the DEA and the NT, assisted by the DBSA, have been actively working towards such a scheme. Initial endeavours by the DEA and the DBSA to track climate finance at different levels have helped build institutional capacity and knowledge about climate finance flows in South Africa as well as the technicalities of tracking.

The South African Government has also acknowledged the importance of mobilising funding at the domestic level and has allocated significant amount of funding towards climate change mitigation and adaptation (notably through the country's DFIs). At the international level, South Africa nevertheless

²⁸ Climate finance flows originate from a wide variety of national and international sources, such as governments, DFIs, private finance institutions (banks, insurers, asset managers, venture capital organisations, etc.), funds, mechanisms, NGOs and foundations. While the number of public sources can be assessed rather easily, private sources of climate finance are somewhat unlimited, making the accurate tracking of private flows nearly impossible. Recipient entities are as diverse as funders and incorporate every institution and entity (including individuals) implementing climate change-related actions on the ground.

continues to support the agenda of both the Africa Group and the G77 and China, and has stressed that the country's reduction of GHG emissions remains conditional on appropriate financial, technical and technological assistance from developed economies.

The various initiatives which attempted to track climate finance highlight that substantial foreign public and private financial flows are already supporting climate change-related projects and programmes in South Africa. That said, the exact amount, based on commonly-agreed definitions and reliable, standardised data, remains unknown and significant knowledge and data gaps remain.

The establishment of effective and robust domestic mechanisms aimed at strategically mobilising, coordinating and monitoring climate finance flows at the country level represents a key priority for South Africa (and other developing countries) to foster efficiently the country's climate change response and to knowledgeably engage at the international level in both the political and technical discussions on determining what and how to count towards the USD 100-billion commitment which has underpinned the UNFCCC consensus since 2009.

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