Implementing the Sustainable Development Goals in South Africa:

Challenges & Opportunities

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Preface

Derick de Jongh

The Albert Luthuli Centre for Responsible Leadership (ALCRL) at the University of Pretoria is proud to host the South African SDG Hub and to support this publication.

We were founded in 2010 with goal of cultivating African leaders who facilitate and support processes of development. This is why we were established not simply as a 'leadership' centre, but as a centre for 'responsible leadership'. The reason behind the specific signifier "responsibility" was an acute awareness by the founding members of the ALCRL of the question *"Leadership for what?"*

On the one hand, we felt that leadership in its conventional and contemporary understanding was focused too much and too narrowly on popular quick-fixes to crises of leadership. On the other hand, focusing only on building new theory seemed in a way too parochial. This why we embarked upon a journey to refine our value proposition.

We believe that our vision "Leaders for good" addresses to some extent this question. We see our mission as "developing a new generation of responsible leaders, shaping local and international business practices and policies in support of social and environmental justice". However, without having a deep understanding of the concrete leadership challenges facing the world, we can very easily again fall into a self-perpetuating spiral of academic theory-building which, as much as it has value (albeit only to a point where research appears in an academic journal), is not really helping us in solving real problems and answering our "Leadership for what?" question.

In my mind there are three key elements that are the building blocks for responsible leadership. First, leaders who take responsibility for themselves, concentrating on virtues of character, integrity and courage (to name just a few). Secondly, leaders who take responsibility not only for society as a whole (in the interests of the common good), but also for the natural environment. Thirdly, leaders who take responsibility with others through collaboration, cross-sector partnerships and sharing responsibility for creating a sustainable future.

But these three elements can easily become simply a check-list, which once again would go against our intention of developing the next generation of "leaders for good". Without instilling a critical mind-set, leaders may just again become insular and removed from reality. To avoid that would require leaders to challenge short-termism and be future-fit with a long-term vision. It would also require not only leaders who challenge a business-as-usual approach, but also leaders who will embrace complexity as a site where creative and innovative solutions to problems will emerge.

So, bearing in mind the complex challenges we are faced with and the unique actors and their reciprocal links trying to solve these problems, we realise that the question *"Leadership for what?"* has never been more urgent than it is today. In my mind the answer is rather simple. The global development agenda through the Sustainable Development Goals (SDGs) should provide the answer to this question. It makes complete sense to be interested in developing leaders who can implement the SDGs and hopefully, by doing so,

solve the complex problems facing the world.

This vision moves us beyond doing yet another piece of discrete academic research, advancing leadership theory, towards a place where we actively pursue finding solutions to leadership challenges with specific reference to the SDGs. This does not mean that we completely ignore the importance of academic research in the field of leadership studies. What it implies is that the current development landscape is uniquely characterised by richness, complexity and, most importantly, urgency. Trying to solve these problems which the SDGs address *only* by doing scholarly research on leadership somehow feels redundant. In other words, the slow cycle of getting research published in a top journal works against the urgency of the current leadership demands. Furthermore, the interconnectedness of the various role players (local and international) demands very specific leadership in implementing and achieving these goals. This poses concrete, real-time challenges which require practical solutions. We undoubtedly live in an environment that calls for responsible leadership. And most importantly for the ALCRL, this striving speaks to our vision of "Leadership for good" and helps us to answer the question *"Leadership for what?"*

Chapter 1:
Partnerships and tools

Nardos Bekele-Thomas

UN Resident Coordinator and UNDP
Resident Representative, South Africa

Transitioning from the MDGs to the SDGs

The 2030 Agenda and its 17 Sustainable Development Goals (SDGs), 169 targets and 231 indicators, is significantly different from its predecessor, the Millennium Development Goals (MDGs), which lists 8 goals and 68 indicators. No country is expected to adopt all the indicators. Countries are required to assess the relevance of the respective indicators to their development agenda and, where appropriate, have domesticated indicators. While the MDGs were simpler to monitor within and across countries, the SDGs are more far-reaching, universal, integrated and transformational.

"The process aimed at finalising the SDGs, on the other hand, was highly consultative, inclusive and applicable to all countries, focusing on People, Prosperity, Planet, Partnership and Peace."

While the MDGs are widely acknowledged to have been the largest and most successful anti-poverty drive the world has seen, lifting over a billion people out of extreme poverty, they were less consultative in their development and more directed towards alleviating the basic needs for food, education, health and sustainability of the least developed countries. The process aimed at finalising the SDGs, on the other hand, was highly consultative, inclusive and applicable to all countries, focusing on People, Prosperity, Planet, Partnership and Peace. Given that the SDGs are more comprehensive by nature, this requires far

greater levels of collaboration and engagement by all sectors and stakeholders in society at the provincial, national, regional and global levels.

For sub-Saharan Africa the MDGs promoted gains in access to primary education from 52% to 80%, increased economic growth, reduced poverty from 57% in 1990 to 41% in 2015,[1] and improved healthcare delivery. However, the quality and relevance of education, jobless growth, gender inequalities, with women earning on average 24% less than men, and decreased but still high maternal and child mortality rates remain a daunting challenge. The unfinished business of the MDGs presents the SDGs with new challenges and opportunities, such as how best to integrate youths and women into the development and productive processes in order to harness this demographic dividend, how to ensure that governance is accountable and institutions effective, and how to ensure that our lives and production patterns now do not compromise the lives of our children and grandchildren.

One mostly unrealised pledge of the MDGs was the allocation of 0.7% of Gross National Income of developed countries to support the developing countries to implement the MDGs. Only six countries met the target: Sweden, Norway, Luxembourg, Denmark, the Netherlands and the United Kingdom.[2] During the financing for development conference held in Addis Ababa in 2015, countries were challenged to look beyond aid and to enhance national capacities for domestic revenue generation, which included tax reform, promoting compliance, curbing corruption and illicit financial flows, which were estimated to be costing Africa US$50 billion a year.[3]

"Some of the key questions raised by countries on the implementation of the SDGs are on how to do the monitoring and evaluation, and how to finance the goals."

Photo by — Andrew Itaga
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South Africa and the SDGs

The 2030 Agenda's SDGs have been very well received in South Africa since their formulation in 2015. The country has assumed a prominent role globally and in Africa in guiding the process and in negotiating for the adoption of the SDGs in its capacity as Chair of the G77 and China.

Furthermore, former First Lady Graça Machel served on the High-Level Panel of Eminent Persons and the former Statistician-General of Statistics South Africa led the Africa team under the African Union banner in formulating the indicators for the African Common Position. Because of this prominent global role, South Africa is named as one of the nine country movers of the SDGs, leading and showcasing the way that SDG domestication is being implemented. Yet enthusiasm for the SDGs is more pronounced at the political and senior echelons of policy making, while only slowly building up steam within government, civil society, the private sector and the public at large.

Some of the key questions raised by countries on the implementation of the SDGs are on how to do the monitoring and evaluation, and how to finance the goals. Different countries are at different levels of proficiency as far as monitoring and evaluation are concerned, and even on conducting the relevant surveys. South Africa is at the forefront in Africa and its baseline report on the SDGs[4] is being widely used as an exemplar of good practice. Notwithstanding, effective implementation will require strong commitment from and coordination

between all stakeholders, since the SDGs extend beyond data collection and embrace the entire gamut of development from planning, formulation of national plans and strategies, implementation, monitoring, evaluation and reporting. In these early days of SDG roll-out countries that are often cited as good examples to emulate in mainstreaming the SDGs in their development process, such as Rwanda, have demonstrated strong coordination platforms on the SDGs and political leadership at the highest levels.

The United Nations and the SDGs in South Africa

The United Nations (UN) country team in South Africa builds on the UN's global experience and expertise in supporting countries to find locally adapted and applicable arrangements towards SDG domestication. Under the direction of the UN Resident Coordinator and in consultation with all Heads of UN Agencies, the UN's guiding principles for support on the SDGs in South Africa are the following:

1— To strengthen government and national ownership by domesticating the SDGs in the context of the National Development Plan (NDP);

2— To use existing systems and further enhance national processes as much as viable and avoid establishing parallel systems;

3— To integrate the provincial and sub-national levels in the process;

4— To work with central government as well as with local levels; and

5— To work with all development partners including civil society, the private sector, academic institutions, philanthropic organisation and others.

To support the mainstreaming of the SDGs in national development plans, the UN is in discussions with the government to field a Mainstreaming, Acceleration and Policy Support (MAPS) mission that will, among other things, assess the alignment of the SDGs to the Medium-Term Strategic Framework (MTSF 2014-2019) and identify SDGs Indicator Accelerators. SDGs Indicator Accelerators refer to the SDG indicators with the highest multiplier effects in achieving the national objectives of the MTSF.

To support the harmonisation of interventions and accountability of the civil society organisations (CSOs) and minimise duplication, the UN facilitated the convening of thirty-six CSO alliances under an umbrella agenda, with Africa Monitor nominated as the focal point by the CSOs. The CSOs are consequently organising themselves around the Statistics South Africa Sector Working Groups used during the identification of the global SDGs and development of the domesticated indicators. The United Nations Development Programme (UNDP), the government, through Department of Planning, Monitoring and Evaluation, and Statistics SA together with other partners, are working closely with the South African SDG Hub at the University of Pretoria to develop an online platform for the exchange of data, thoughts and knowledge products on the SDGs in South Africa and across the region. It is anticipated that this hub will facilitate research and innovation as well as reach

out to the youth to promote their involvement with the SDGs.

Facilitation of engagement of the private sector through the United Nations Global Compact local network in South Africa is also progressing well, in that companies that are part of the network have mapped out and identified strategic action projects that are aligned with the NDP and the SDGs. Efforts to reach out to philanthropic organisations are also underway with a view to establishing an SDG philanthropy platform in South Africa. Eventually the aim will be to bring together all these actors and stakeholders through their organised groupings to form a national SDG institutional coordination mechanism that will cascade down to provincial and local levels to drive the implementation of the domesticated SDG agenda in the country.

In line with the MAPS, the UN and partners have developed a number of tools to facilitate private sector involvement in the SDGs. Some of these tools are described below.

SDG Wizard is a 'conversation starter'. This easy to use tool has been developed by the SDG Philanthropy Platform to determine which SDGs targets and indicators are most relevant for an organisation and which indicators they can track to measure impact. The tool can be found at: sdgfunders.org. Business+ is a survey that provides a status baseline report on the inclusivity and private sector alignment with SDGs. Ideally, the recommendations would be taken forward at both firm level and policy levels, allowing for future measurements of increase in awareness. The Inclusive Business Maturity Tool

was developed by UNDP, Deloitte and Business Call to Action to support business leaders in pursuing inclusive business as a key to advancing

"Tools are being continuously developed to support the government, private sector and philanthropic organisations, civil society and other partners to enhance the integration of the SDGs into day-today work and activities."

the SDGs. This tool can be regarded as a journey within the business process of a firm whereby communities can be assessed and appropriately included in the business process as suppliers, processors, distributors or consumers. The SDG Philanthropy Platform developed Country Primers to expedite collaboration between governments, the UN and foundations through mapping SDG implementation by actors (public or private) and through showcasing the strategies that exist.

Tools are being continuously developed to support the government, private sector and philanthropic organisations, civil society and other partners to enhance the integration of the SDGs into day-to-day work and activities. The key points are that the private sector's engagement in the SDGs must go well beyond corporate social responsibility or small donations in communities, and that it makes sound business and investment sense to be an active participant promoting the implementation of the SDGs.

Businesses that are well integrated within their communities and have a reputation of being socially, economically and environmentally conscious organisations through their business processes have a more solid supply-and-demand base, and better chance of success.

[1] United Nations (2015) The millennium development goals report. Report, United Nations, New York, July.

[2] United Nations (2015) The millennium development goals report. Report, United Nations, New York, July.

[3] Mbeki T et al. (2014) Report of high-level panel on illicit financial flows from Africa. Report, United Nations Economic Commission for Africa/African Union Conference of Ministers of Finance, Planning and Economic Development, United Nations, New York.

[4] Statistics South Africa (2017) Achieving the SDGs. *Data Voices*, 17 January, 2.

South Africa's progress on selected SDG 1 and SDG 2 indicators

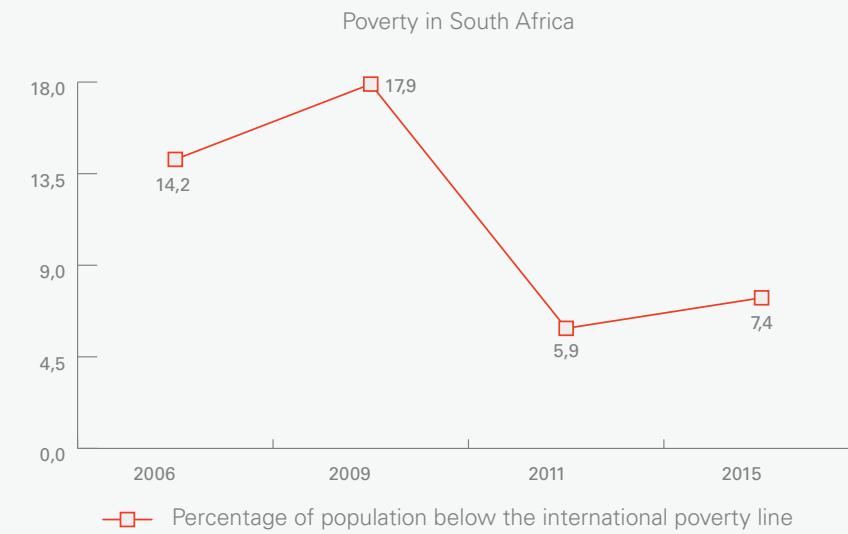## SDG1: End poverty in all its forms everywhere

Poverty in South Africa

18,0

13,5

9,0

4,5

0,0

2006   2009   2011   2015

14,2   17,9   5,9   7,4

☐ Percentage of population below the international poverty line

Social protection in South Africa'.

17,0

16,5

16,0

15,5

15,0

2013   2014   2015   2016

16,032391   15,932473   16,642643   16,991634

☐ Number of social grants (Millions)

Total government expentiture on essential services

■ 2013/14   ■ 2014/15   ■ 2015/16

0,220

0,165

0,110

0,055

0,000

Proportion

Education   Basic education   Higher education   Health   Social development   Total spending on essential services
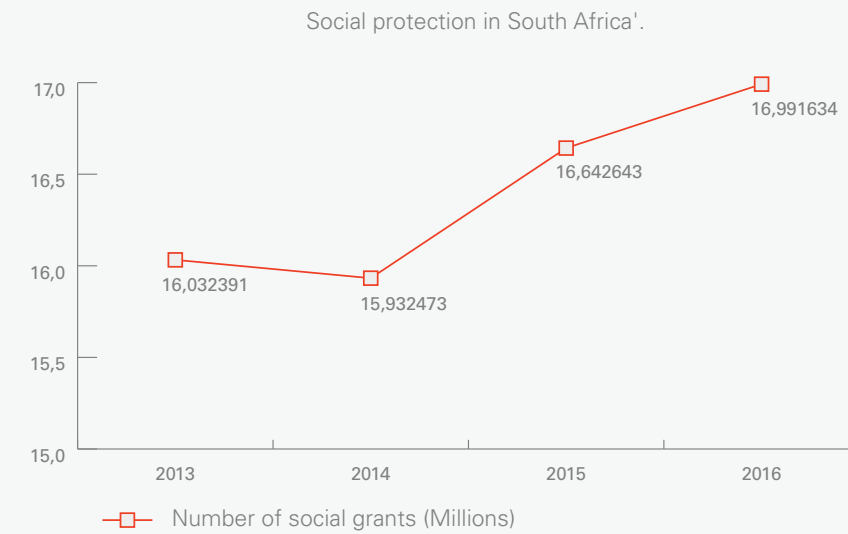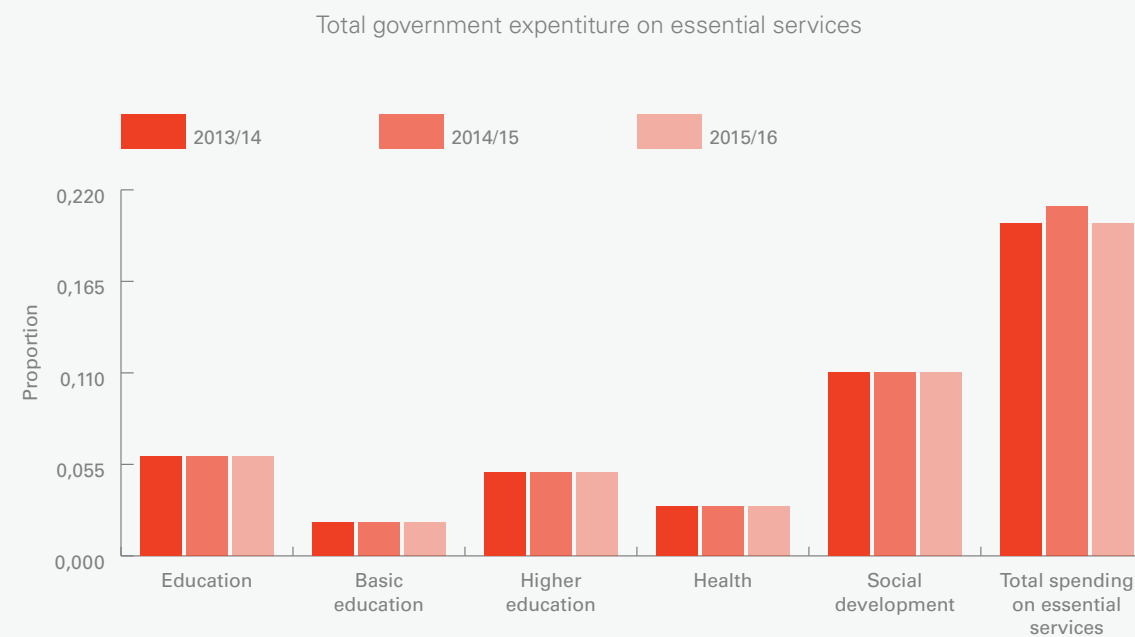
SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Prevalence of food insecurity (CCHIP)

Fig.4 — Sources: South African National Health and Nutrition Examination Survey (SANHANES-1): 2014 Edition. Cape Town: HSRC Press: National Food Consumption Survey: - Fortfication Baseline: South Africa, 2005. Pretoria: Department of Health
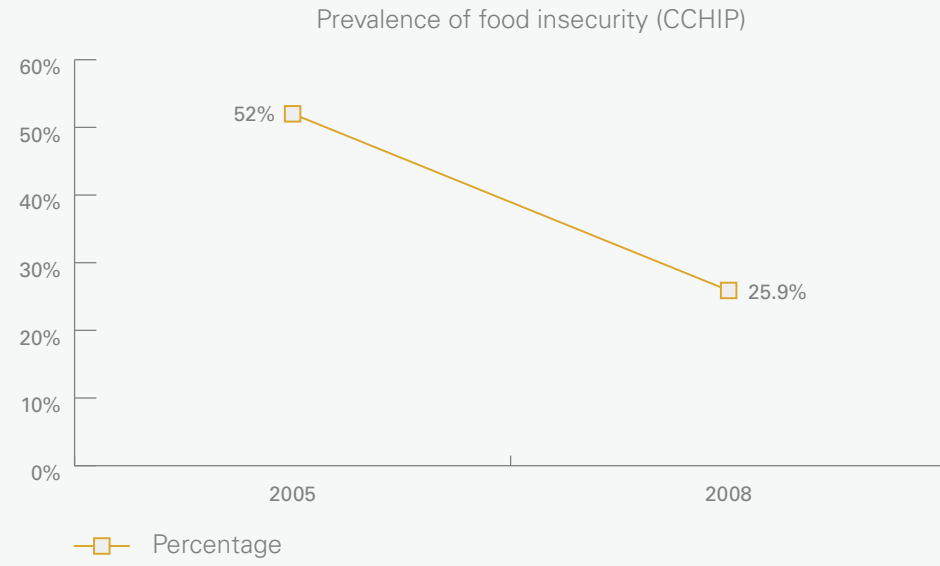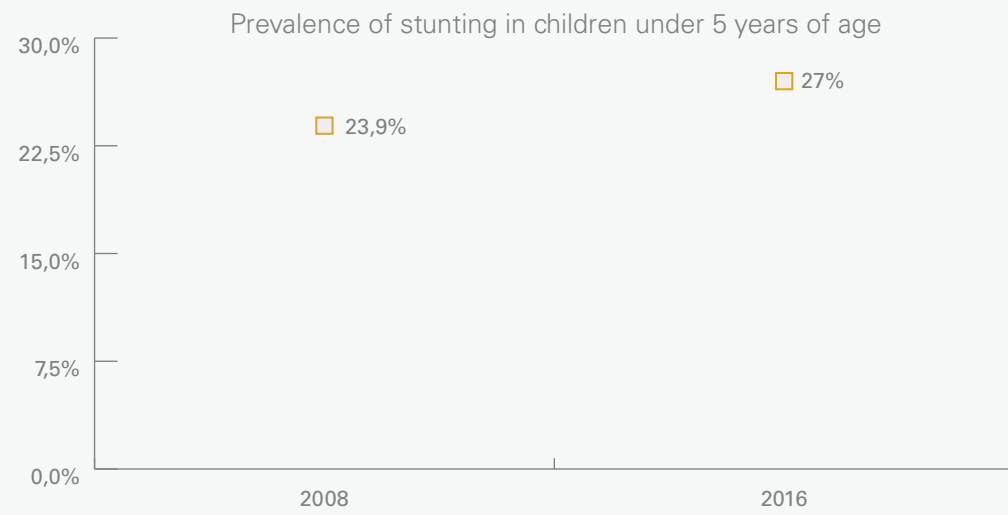Base Year = 2008

Prevalence of stunting in children under 5 years of age

Fig.5 — Sources: South African National Health and Nutrition Examination Survey, HSRC; SADHS, Statistics South Africa

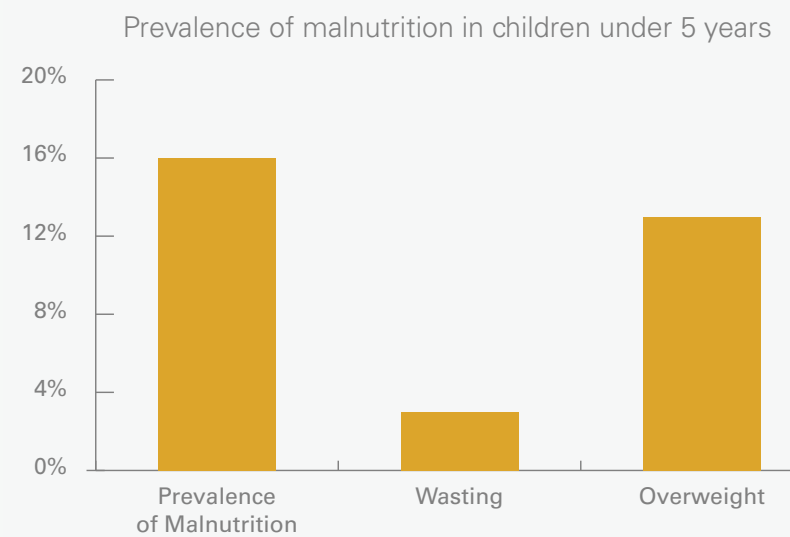## Prevalence of malnutrition in children under 5 years

Fig.6 — Source: South African Demographic and Health Survey, Statistics South Africa

Chapter 2:
Co-ordinated planning, monitoring and evaluation

Harsha Dayal

Director of Research, Department of Planning, Monitoring and Evaluation

"All stakeholders involved in contributing to these developmental objectives must ensure alignment of the SDGs to National plans and programmes of action across sectors."

The SDGs and South Africa's national planning, monitoring and evaluation system

The SDGs are expected to be delivered within dynamic contexts and varying historical legacies, where actors and systems intersect at multiple levels, some with competing priorities and interests. A combination of individual, organizational, institutional and state efforts and processes have to come together to achieve developmental goals and advance our common humanity. The successful implementation of the SDGs depend on sustained coordination of policies, programmes and strategies at all levels.

Developmental policy objectives can only be met if the state has the capacity to deliver on these policies. All stakeholders involved in contributing to these developmental objectives must ensure alignment of the SDGs to National plans and programmes of action across sectors. This chapter puts focus on national coordination efforts needed to effectively implement the SDGs in order to achieve results.

The Department of Planning, Monitoring and Evaluation (DPME) derives its mandate from the Constitution of South Africa (1996), legislation passed by parliament and sectoral monitoring policies. It is one of the national Centre of

Government (COG) departments whose function is to oversee strategic planning, coordination of policy design and implementation, performance monitoring and accountability. The Centre of Government refers to 'the institution or group of institutions that provide direct support to a country's chief executive'.[1]

Long term planning

There has been substantial progress in the development of South Africa's *planning system*, led by DPME. The design and finalisation of the National Development Plan (NDP) for South Africa's long-term development trajectory are incorporated in the National Development Plan providing a macro plan for socio-economic priorities. This received widespread support and mobilisation across political parties as well as across the public and the private sectors. DPME's main role now is to ensure successful implementation of the NDP. Even though weaknesses have been identified in the overall system relating to the societal reach and the ethos of planning, technical deficiencies and capacity, the overall structure of the planning system is coherent and allows for alignment between planning, budgeting, monitoring and evaluation.[2] Figure 1 provides a visual overview of South Africa's planning, monitoring and evaluation system.

Monitoring progress

Monitoring functions are regarded as a strategic approach by DPME for ensuring implementation of the country's development priorities, fostering accountability for performance (efficiency and effectiveness), promoting learning from experience

Fig A — South Africa's planning, monitoring and evaluation system
Source: DPME, 2015. Reforming the South African Government

"The goals contained in the SDGs, but which are not prioritised by national government, will require social partners to assess relevance, provide data and agree on progress made"

and facilitating stakeholder coordination for policy coherence and impact.[3] With several sector and line function departments drawing on administrative and other management data, there is a need to generate reliable meta-level data for reporting on national priorities as well as on the Sustainable Development Goals (SDGs). DPME and Statistics South Africa (Stats SA) work together to align and coordinate data sources and determine data needs and quality for reporting on the Medium-Term Strategic Framework (MTSF) indicators and targets. DPME's data unit supports the use of data to inform decisions and reporting. The annual 'Development Indicators'[4] are produced by the unit, which provides a resource for data analysis across the government as well as the private sector. Where the SDGs are aligned to the MTSF, these data points can be easily sourced to analyse and report on SDGs. The goals contained in the SDGs, but which are not prioritised by national government, will require social partners to assess relevance, provide data and agree on progress made.

Evaluation to measure performance and effectiveness

DPME is also the custodian of the National Evaluation System (NES), based on the National Evaluation Policy Framework. The system focuses on ownership, credibility and learning, and it guides other national, provincial and now some municipalities on various approaches and types of evaluations to measure performance and programme effectiveness.[5] Since its inception in 2011, the NES has generated critical evidence to inform large-scale programmes which have an extensive footprint in the country to meet developmental objectives. Where billions of rands

in public expenditure are directed at interventions to overcome poverty and inequality, evaluating the effectiveness, efficiency and impact of these interventions requires the use of these findings to assess progress and redirect resources where interventions work. While implementation of evaluation findings has been found to be the main challenge of the system, evaluations provide a source of important evidence for assessing progress on relevant SDGs.

The effective governance of implementation processes

The role of government and specifically of DPME has been highlighted so far in the implementation efforts of the SDGs. Though government is not the only and primary actor in the delivery and achievement of the SGDs. The role of other important role players such as business/corporate sector, civil society, parastatals and parliament, who actively contribute towards the attainment of SDGs, has been acknowledged in ensuring accountability and delivery on commitments made. DPME acknowledges the need for effective governance structures to steer the domestication process of the SDGs. While 'sustainable development' in its broadest sense depends on integration, coordination and alignment across various sectors, it requires certain responsibilities to be driven by key departments to ensure delivery.

The continental policy context for implementing the SDGs: Agenda 2063

In May 2013 the African Union (AU) developed a pan-African vision of 'an integrated, prosperous and peaceful Africa, driven by its own citizens, representing a dynamic force in the international

arena'.[6] Agenda 2063 was born out of this thinking within the context of the AU Vision, the AU Commission, and supported by the New Partnership for Africa's Development Planning and Coordinating Agency, the African Development Bank and the UN Economic Commission for Africa in outlining the 'Africa that we want'.

The Plan is guided by seven aspirations:

1 — A prosperous Africa, based on inclusive growth and sustainable development;

2 — An integrated continent, politically united, based on the ideals of Pan Africanism and the vision of Africa's Renaissance;

3 — An Africa of good governance, democracy, respect for human rights, justice and the rule of law;

4 — A peaceful and secure Africa;

5 — Africa with a strong cultural identity, common heritage, values and ethics;

6 — An Africa whose development is people-driven, relying on the potential offered by African people, especially its women and youth, and caring for children;

7 — An Africa as a strong, united, resilient and influential global player and partner.

Africa's strategic positioning is understood in the light of the global trends that impact on the development of the continent itself. As a regional partner in advancing a socio-economic agenda for Africa, work is currently underway to align the SDGs not only to the NDP, but also to Agenda 2063, which will allow countries of Africa to leverage on

coordinated efforts across common national and regional objectives.

Opportunities for the implementation of the SDGs

Building on the MDGs and emerging from the experience of other specific global agendas, implementation of the SDGs presents unique opportunities. The United Nations (UN) recognises that 'the spread of information and communications technology and global interconnectedness has great potential to accelerate human progress, to bridge the digital divide and to develop knowledge societies…'.[7] SDG 16 and SDG 17 in particular pave the way for 'building effective, accountable and inclusive institutions at all levels', with a key focus on systemic issues of policy coherence, multi-stakeholder partnerships and systems for data collection, monitoring and accountability to be addressed. The SDGs thus come at a time when success is depended on both human and digital strides, with much appetite for scientific and technological innovation, which can influence controversial and competing sectors positively. Three distinct opportunities are discussed in the context of implementing the SDGs.

Promoting active citizenry and multi-stakeholder engagements

To deliver on the SDGs, Agenda 2063, NDP and other national and continental obligations, there is a need to partner, coordinate and collaborate in order to establish and strengthen partnerships that blend the strengths of state and non-state actors. For these approaches to be realised, various agents must be provided with the opportunity to deliberate and find consensus on legitimate platforms. DPME has initiated various national

"To deliver on the SDGs, Agenda 2063, NDP and other national and continental obligations, there is a need to partner, coordinate and collaborate in order to establish and strengthen partnerships that blend the strengths of state and non-state actors."

dialogues with key stakeholders in its capacity as a strategic leader. Implementation processes on multi-stakeholder partnerships for the SDGs are not just about government. The Oliver Tambo Debate Series, in partnership with academia (Wits School of Governance), UN and DPME, has played an instrumental role in facilitating conversations and debates with key stakeholders on strategic national priorities. In its latest report on the sixth debate series experts and representatives of civil society organisations noted that focusing on key capabilities in the implementation of the SDGs are about both the people and the country.[8] Capabilities include skills, infrastructure, social security, strong institutions and partnerships both within the country and with key international partners. If the objective of the plan is the elimination of poverty and the reduction of inequality, this is only feasible through uniting South Africans around a common programme to eliminate poverty and reduce inequality.

Expanding youth involvement

Several plans, programmes and activities have been initiated to involve the youth sector in implementing the SDGs as well as the NDP. This presents a promising opportunity to involve future leaders of South Africa as well as internationally in sustainable development and long-term goals affecting society. Locally, DPME has facilitated participatory processes for learners in Grade 12 to engage with Vision 2030 around the NDP and identify with long-term goals through essay competitions and sharing of ideal future societies they want to be part of.

On an international scale, South African youths participated in a global event where young leaders were given a chance to meet their counterparts from every country in the world and resolve to make the world a better place, inspired by climate justice. The annual 'One Young World Summit' presents a successful multi-stakeholder engagement of private and public institutions that brings together the young talent and leaders from global and national companies, non-governmental organisations, universities and other forward-thinking organisations. The Summit offers the opportunity for delegates to debate, formulate and share innovative solutions to help achieve the Sustainable Development Goals. Implementation of the SDGs and monitoring progress while tracking the targets being met by the youth across the sectors and across the globe provide new momentum towards fulfilling the SDGs.

Strengthening knowledge infrastructure

There is an extensive need for research capacity and infrastructure to inform various sectors on what the socio-economic problems are, identifying baselines and developing effective programmes of actions to drive thematic content towards sustainable development. Building on the evidence generated since the MDGs were implemented presents further opportunities in the implementation of the SDGs to strengthen knowledge infrastructure. Effective knowledge management systems have become integral to well-functioning organisations in the private as well as public sectors. All types of data and information in the generation, intermediation and use of relevant research which generates greater

"An adequate supply of policy-relevant research across the national priority areas is necessary to inform implementation of the government's programme of action, the NDP as well as the SDGs."

understanding of citizen views, behaviour changes, political economy, power dynamics and sector development are critical to policy research. An adequate supply of policy-relevant research across the national priority areas is necessary to inform implementation of the government's programme of action, the NDP as well as the SDGs. Policy research also requires innovative methodologies in the synthesis of all available evidence to assess the impact of the policies on society and their progress. This field of work requires serious attention for policy coherence as South Africa moves into the stage of policy stability.

DPME has championed methodologies for evidence synthesis for the public sector and has partnered effectively with academia and other research institutions in the development of knowledge management tools using evidence-mapping approaches to inform policy implementation. The network generated through this work has supported the development of the South African SDG Hub at the University of Pretoria, which is unique in its sourcing of relevant evidence and in organising existing research around the seventeen SDGs.[9] These methodologies and other innovations internationally for building effective knowledge infrastructure facilitate the implementation of SDGs

Challenges on implementing the SDGs

Many countries have initiated specific programmes to address implementation of the SDGs, as guided by the UN's information forums and platforms. Despite heightened awareness on local relevance for the domestication of the SDGs, and multiple efforts to improve commitment and coordination, challenges remain. In moving forward from reforms to implementation, Andrews and associates provide a critical reflection for countries, especially African countries, who take on the correct 'form' and structures but struggle to effectively fulfil their 'functions'. Examples of countries who 'adopt the best practice interventions proposed by international organisations and endorsed by the international business community, but ultimately find these best practices poorly fitted to their political realities and capacity constraints' are illustrated.[10] South Africa is not unique with regard to implementation challenges. Some of these challenges are highlighted.

SDGs being implemented within changing development paradigms

The SDGs were conceptualised with a particular focus on long-term development objectives and are expected to be delivered within dynamic contexts. However, development theory is conceptualised from different scholarly perspectives, depending on the economic, sociological or political lenses adopted. The role of the state in development theory and practice went through four paradigm shifts before the new millennium. The literature points to a shift from the state viewed as the problem in economic failures to an increasing acknowledgement of the role of the state in promoting development. Two separate trends challenged this notion of a minimal role for the state. One was the east Asian miracle from which

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National – SA Vision 2030	Continental – Agenda 2063 Regional priorities	Global – SDGs
— National priorities — Sectoral plans; programmes and strategies — Spatial development — Business — Civil society & NGOs	— Inter-sectoral impact — Alignment of timeframes; goals — Migration patterns — Spatial development	— International development agenda — Global spaces of state/ non-state forums and structures for engagements — Accountability

⟵ Priorities of communities and broader society ⟶

Fig. B — National, regional and global agendas

the concept of the 'developmental state' emerged, and the other was the generation of an alternative theory from academia in sociology and political science. This is significant as we need to take into account contexts, particularly historical legacies, within which the SDGs are expected to be delivered.

South Africa, for example, is known to have two worlds in one country. The country has world-class cities, infrastructure and technologies. Our potential for research and innovation was recognised in winning the award for the Square Kilometre Array – an ambitious science project that we have embarked on confidently due to our scientific and research capacity. Yet there is the persistent triple challenge of poverty, inequality and unemployment – the basic rationale for the SDGs. These contrasts play out in the interface between science and society or policy that aims to improve the quality of lives of all citizens.

Monitoring competing and shifting priorities

A particular challenge for tracking progress towards meeting SDG targets is monitoring the competing and shifting priorities between sectors, spaces and levels of governance. Competing priorities become evident during the allocation of resources, often leading to situations where needs are addressed only if funding is available, or where funding drives which priorities need to be set. Allocative efficiency should be based on effective planning, participatory processes and governance. This is seen to facilitate state-society relations that underpin democratic values to hold governments to account, but to also establish inclusive growth and development. However, the reality facing many countries is that competing priorities can steer policy-makers away from agreed visionary goals and targets, while shifting priorities makes implementers confused on what priorities to focus on.

Figure B provides a summary of priority areas across the national, regional and global agendas – South Africa's NDP, Africa's Agenda 2063 and the global SDGs, with priorities established by communities and broader society cutting across all of the agendas.

Poor state of implementation research and analytical capacity

A critical challenge that could possibly be the largest obstacle for effective implementation is the poor state of implementation research and other evidence to assess what works, where it works, for whom it works and under what conditions. Availability and access to various sources of data and information as the basis of undertaking any form of research are uneven across the sectors nationally and internationally. The value and power of evidence to inform decision making and planning are increasing; however, access to relevant information, quality data and analytical capacity has been reported to be a major challenge, especially for the public sector. South Africa is known for its progressive and rights-based constitution from which the legislative and policy frameworks are derived. Yet implementation failures are evident across the sectors. Evaluation evidence undertaken in DPME shows that few programmes intended as social interventions by the state are informed by adequate diagnostics, or have an explicit causal pathway to overcome problems for change. Where diagnostics exist, they are not taken further to explore solutions. At a recent conference on the environment and transformation it was found that 95% of climate change research is about understanding the problem rather than exploring solutions on the basis of scientific evidence.[11] Assessing an evidence synthesis exercise on the policy transition from Housing to Human Settlements in DPME, it was found that little research is available which

demonstrate causal paths which show direct links between an intervention and an outcome. A synthesis of the literature on implementation research found that there is good evidence for what does not work, reasonable evidence for what does works, and a clear lack of evidence in other areas.[12]

Implementation research, experimental designs to assess impact and research to test assumptions on causal pathways are not adequate to understand what the challenges are to translate policies and strategies into intervention programmes. These reflect to some extent the dilemma we potentially have regarding implementation of the SDGs

Conclusions

This chapter provided preliminary discussion on the implementation of the SDGs and the coordination role of a COG department. In highlighting some key opportunities and challenges, it becomes clear that implementation plans are needed where roles and rules of engagement are defined. With high levels of dependence on multiple stakeholders, at various intersecting points in the delivery of national programmes of action, coordination in planning, monitoring and evaluating the various efforts is critical. At this point, it is important to highlight the sentiments expressed at a recent gathering of key stakeholders around the domestication of the SDGs: 'In working towards realising the vision of both the NDP and the SDGs, South Africa has made several important steps forward, but also faces considerable challenges regarding implementation, capacity-building, financing, and engagement. Unlike the negotiations preceding the setting of the Millennium Development Goals, those for the development of the UN's Sustainable Development Goals marked the first time that all member states participated in discussing and setting goals and

targets for global and local development. While this opened up space for increased participation and engagement, it also illustrated the reality that different nations, with differing resources, needs and pressures, are at different levels of capacity when it comes to implementing these goals'.[13]

[1] Alessandro M, Lafuente M and Santiso C (2013) *The role of the center of government. Inter-American Development Bank.* Technical note for the Inter-American Development Bank. Technical note no. IDB-TN-581, September. Washington D.C.: IDB.

[2] Department of Planning, Monitoring and Evaluation (2015) Reforming the South African government planning system. Discussion document, National Planning Commission, Pretoria.

[3] Department of Planning, Monitoring and Evaluation (2017a) Concept note on DPME integrated monitoring systems. Department of Planning, Monitoring and Evaluation, Pretoria.

[4] Department of Planning, Monitoring and Evaluation (2014) Development indicators. Report, Department of Planning, Monitoring and Evaluation, Pretoria.

[5] Department of Planning, Monitoring and Evaluation (2017b) Concept note on DPME evaluations and other evidence. Department of Planning, Monitoring and Evaluation, Pretoria.

[6] African Union Commission (2015) Agenda 2063: The Africa we want. Report. African Union Commission, Addis Ababa, Ethiopia, April.

[7] United Nations (2015) Transforming our world: the 2030 Agenda for Sustainable Development. Resolution adopted by the General Assembly, New York, 25 September.

[8] Bridge (2016) Aligning the sustainable development goals (SDGs) to the NDP: towards domestication of the SDGs in South Africa. Report, Wits School of Governance, Johannesburg, 17 June.

[9] The South African Sustainable Development Knowledge Hub (no date). Available at: http://www.sasdkh.org/ (accessed 2 March 2018).

[10] Andrews M, Pritchett L and Woolcock M (2017) *Building State Capability: Evidence, Analysis, Action.* Oxford: Oxford University Press.

[11] Centre for Environmental Change and Human Resilience (2017) Conference proceedings, University of Dundee, Scotland.

[12] Fixen DL, Naoom SF, Blasé KA, Friedman RM and Wallace F (2005) *Implementation Research: A Synthesis of the Literature.* Tampa: University of South Florida.

[13] Bridge (2016) Aligning the sustainable development goals (SDGs) to the NDP: towards domestication of the SDGs in South Africa. Report, Wits School of Governance, Johannesburg, 17 June.

South Africa's progress on selected SDG 3 and SDG 6 indicators

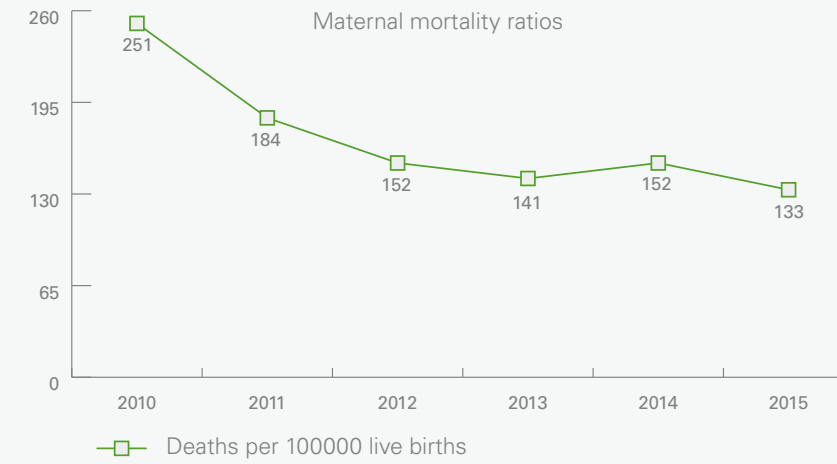## SDG 3: Ensure healthy lives and promote well-being for all at all ages

Maternal mortality ratios

260
251
195
184
152
130
141
152
133
65
0

2010   2011   2012   2013   2014   2015

☐ Deaths per 100000 live births

Fig.7 — Source: Civil Registration and Vital Statistics, Statistics South Africa
Base Year = 2015

Under-five mortality rate

Rate per 1000 live births

50,0
37,5
25,0
12,5
0,0

2010   2011   2012   2013   2014   2015

Fig. 8 — Source: Civil Registration and Vital Statistics, Statistics South Africa
Base Year = 2015

Number of new HIV infections per 1000 uninfected population among those aged 15-24 years

Number per 1000

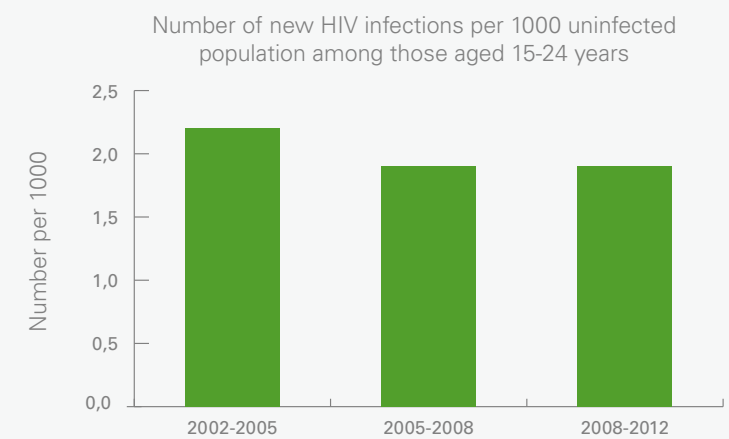2,5
2,0
1,5
1,0
0,5
0,0

2002-2005   2005-2008   2008-2012
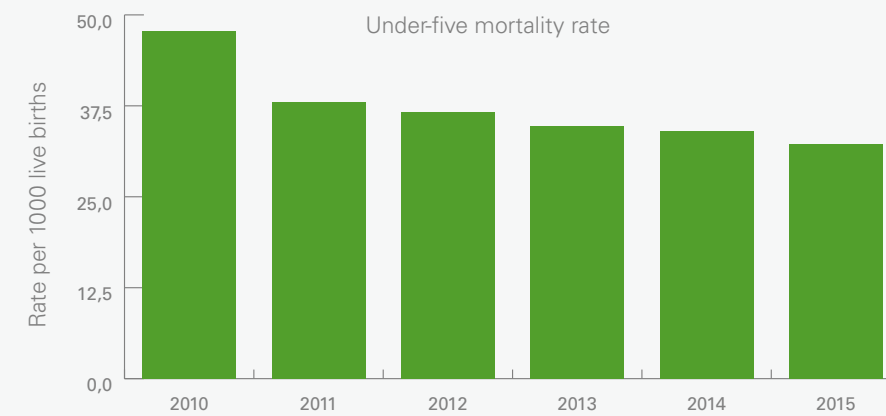
Fig.9 — Source: South African National HIV Prevalence, Incidence and Behaviour Survey, HSRC
Base year = 2008-2012

SDG 6: Ensure availability and sustainable management of water and sanitation for all

Percentage of population using safely managed drinking water services
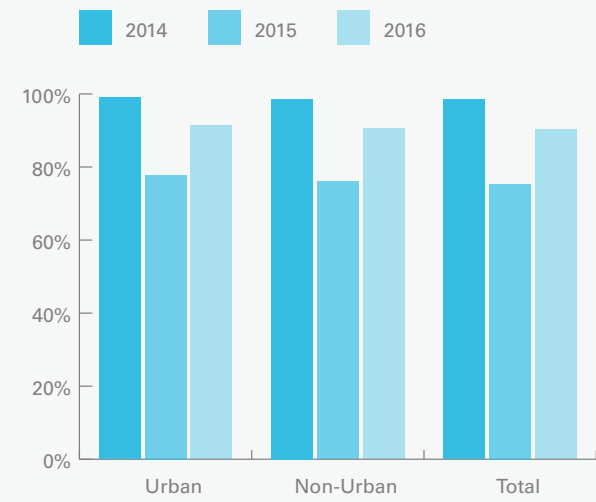

Fig.10 — Source: General Household Survey, Statistics South Africa

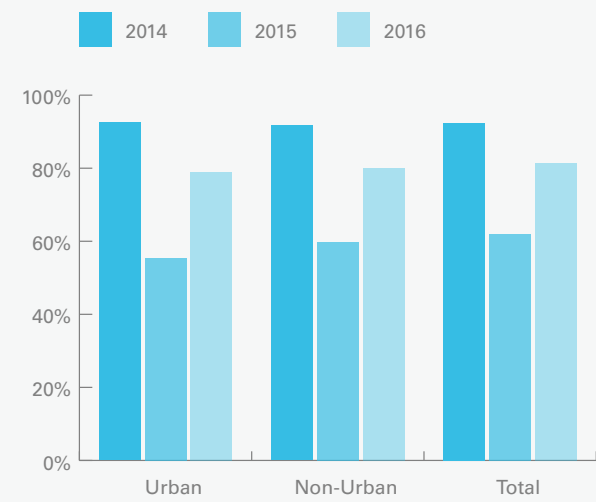Percentage of population using safely managed sanitation services

Fig.11 — Source: General Household Survey, Statistics South Africa

Chapter 3:
The role of science, technology and innovation

Nonhlanhla Mkhize

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South Africa's National Development Plan (NDP) and the 2030 Agenda calls for the integration and exploitation of science, technology and innovation (STI) in realising the development agenda.[1] Both the NDP and the 2030 Agenda's Sustainable Development Goals (SDGs) are guided by the principles of inclusion ('leave no one behind'), integrated socioeconomic development in an environmentally sustainable manner ('sustainable development at the core of development programmes'), decent employment and inclusive growth (prosperity), peace and partnerships.[2] On this basis, incorporating STI in implementing SDGs is aligned with these principles and further draws on the resolutions of the Addis Ababa Action Agenda, in which member states resolve to 'adopt science, technology and innovation strategies as integral elements of our national sustainable development strategies to help to strengthen knowledge-sharing and collaboration'.[3]

Institutional landscape for harnessing STI implementing SDGs

In actualising the integration of STI in implementing SDGs, the UN established the Technology Facilitation Mechanism (TFM). It consists of a United Nations (UN) Interagency Task Team on Science, Technology and Innovation for the SDGs, including the ten-member group of representatives from civil society, the private sector and the scientific community, an annual STI Forum (collaborative Multi-stakeholder Forum on Science, Technology and Innovation for the SDGs) and an online platform as a gateway for information on existing STI initiatives, mechanisms

and programmes.[4] The TFM perceives STI as an enabler and a catalyst in the achievement of the SDGs and members states are encouraged to ensure that STI is a significant feature in the means of implementation for achieving various goals, for example, SDG 9 and SDG 17.[5]

The Department of Science and Technology (DST) provides leadership in STI for the benefit of national, regional and continental development, as first expressed in the 1996 White Paper on Science and Technology.[6] Building on the principles of the 1996 White Paper on Science and Technology, its implementation successes, the challenges it faced and the lessons learnt, as well as various independent reviews on the functioning of the system of innovation and continental and global developments and changes, the DST led the development of the draft 2017 White Paper on STI. The vision of the 2017 White Paper is 'STI enabling inclusive development in a changing world'; it builds on the 1996 White Paper on Science and Technology's commitment to an inclusive, responsive and transformative system of innovation in which the knowledge, technologies, products and processes produced are converted into increased wealth by industry and business, and into an improved quality of life for all members of society in an environmentally sustainable manner.[7] The draft 2017 White Paper on STI is aligned to the 2030 Agenda and its implementation will respond to the call of the UN to implement the SDGs through building on existing planning instruments, strategies and programmes.[8]

In executing its mandate, the DST is enabled by collective and collaborative actions across

government (for example, various departments whose mandate and policy focus on STI; trade and industry; finance and tax; economic development; and higher education and training institutions); science and research institutions, innovation and productivity centres, standard-setting bodies; banking and other financing mechanisms; the private sector (big business and small and medium enterprises) and non-profit organisations.[9] On this basis, harnessing STI entails an intricate network of institutions, policies, programmes and instruments informed by the DST mandate as well as that of sector departments and strategies, particularly in the economic and social clusters; such a network forms the basis of the South African system of innovation.[10] The system of innovation works to introduce new or improved products, new processes and new services for the socioeconomic benefit of society in an environmentally sustainable manner.[11]

The system of innovation is enabled by a knowledge infrastructure that supports knowledge generation and exploitation for economic, social and environmental benefit; it builds and strengthens human competencies, abilities and skills to advance innovation in development and innovation for development in a manner that allows South Africa to build and sustain relationships, within itself and with other societies. This enables it to interact productively, both for its own and for mutual benefit, and it must do so with a long-term view, covering spans of generations.[12] The knowledge infrastructure already has ongoing initiatives that integrate STI in the development agenda, for example, various research institutions, fifteen Centres of Excellence and 198 Research

Chairs aligned to the SDG agenda. It also includes funding mechanisms such as the South African Research Infrastructures Roadmap, which enhances access to research infrastructure in line with developing STI capacity and generates knowledge in a number of thematic areas: (i) humans and society; (ii) health, biological and food security; (iii) earth and environment; (iv) materials and manufacturing; and (v) energy (Figure 1).[13] In addition to these publicly-funded programmes and institutions, various private sector and non-profit sector initiatives in research and development, technology and innovation support and business incubation services also form part of the system of innovation.[14]

Investments by the DST and other partners in strengthening the system of innovation, despite existing challenges, continue to enable South Africa to leverage STI for its development agenda, for example, HIV drug development research, off-grid solutions for sanitation and energy, climate change risk and vulnerability response mechanisms. The progress made has also advanced inclusion of non-traditional actors in the system of innovation, for example, grassroots innovators whose innovations arise outside the realms of formal institutions of innovation.[15] The inclusion of grassroots innovators is aligned with the principle of 'leaving no one behind' in knowledge generation, dissemination and exploitation for national socioeconomic and environmental benefit.[16]

"The system of innovation works to introduce new or improved products, new pr cesses and new services for the socioeconomic benefit of society in an environmentally sustainable manner."

"The SDG agenda involves a deliberate commitment to and focus on inclusive and sustainable development, presenting an opportunity to improve coherence across STI, economic development and sustai able environmental management strategies."

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Opportunities in harnessing STI for SDGs

Harnessing STI for SDGs offers a number of opportunities at the domestic, regional and global level, thereby enabling South Africa to also contribute towards the achievement of the ambitious global agenda. These opportunities, as listed below, straddle policy and policy instruments, research and development, capacity building, and public participation in STI for SDGs.

Improving policy coherence

— The interconnectedness and interrelatedness of the SDGs provides an opportunity for South Africa to enhance policy coherence between STI and other sector policies. Based on previous research, coherence between STI and economic growth policies is stronger when compared with social development or human wellbeing policies, for example, food and nutrition security policy (SDG 2), education policy that includes ensuring an equitable and inclusive education system (SDG 4), gender equality (SDG 5) and the national sanitation policy (SDG 6). This implies that South Africa needs to better harness STI as an enabler and catalyst for improving wellbeing, for example, finding innovative technology solutions to improve equitable access to nutritious food, health, education, sanitation and energy services. In this regard, some practitioners have recommended that STI be embedded in all policies and implementation frameworks for human well-being; for example, the Outcomes framework of basic education, rural development and human settlements outcomes could include STI indicators and targets for achieving the predefined policy

outcomes. Policies and strategies being evaluated for Cabinet approval could also include an STI category being added to the existing socio-economic impact assessment system.

— The SDG agenda involves a deliberate commitment to and focus on inclusive and sustainable development, presenting an opportunity to improve coherence across STI, economic development and sustainable environmental management strategies; for example, it could maintain a balance between inclusive economic growth and sustainable use of natural resources using the ocean economy as a platform to develop skills (including high-end skills) for South Africa to better unlock economic growth opportunities through the ocean economy.[17] To illustrate, the realisation of the ocean economy is aligned to SDG 14 and its implementation has seen the establishment of the South African Marine Research and Exploration Forum. In support of one of the targets of SDG 15, South Africa's Environmental Management Act recognises the need to control and eradicate invasive alien species and, in this regard, research and development are coordinated through the Centre for Invasion Biology, while a dedicated programme that affords work opportunities is currently in place.[18] In addition, an opportunity has been identified in advancing the implementation of the revised National Local Economic Development Framework, of which innovation is one of the strategic pillars. In so doing, more attention is allocated to strengthening local innovation and production systems, inclusion of grassroots innovators and ensuring equitable access and

diffusion of technologies for local economic development as seen in, for example, SDG 9 (equitable access to the knowledge infrastructure and internet for all) and SDG 12 (STI support to waste recycling entrepreneurs and sustainable tourism).[19]

— Policy coherence is also recognised as critical in advancing the implementation of evidence-based decision making in key decisions including budget allocation processes for research infrastructures, and supporting technology development and deployment technologies in a manner that advances the inclusion of women, youths, people living with disabilities and other vulnerable groups in the STI value chains. Such inclusion would improve equitable participation and benefit-sharing – hence, for example, achieving SDG 9 targets of universal access to the internet and inclusive industrialisation. This could be achieved through, for example, improving technology transfer to cooperatives in agriculture and agro-processing, and also by improving support to markets particularly for publicly-funded local economic development initiatives as well as improving support for innovation in the informal sector of the economy. These areas of improvement are also alluded to in the 2012 Ministerial Review of the STI landscape, which would enable the marginalised, the excluded and other vulnerable groups to contribute towards technology development and innovation, not only as consumers but also as co-creators.[20]

— The existing policy environment and harnessing STI for SDGs also provide strategic

opportunities for furthering the development and implementation of strategies for technology acquisition and deployment fund. Such funding would complement existing infrastructure funding and would also contribute towards scaling-up appropriate innovative technology solutions in, for example, sanitation, energy and health. The funding and other enabling instruments would contribute towards effectively and efficiently harnessing STI, since innovative technology solutions tend to disrupt existing systems of delivery and, despite creating new value chains, cannot be successfully deployed in a non-responsive and non-aligned policy environment.

Knowledge generation

The interconnectedness of some of the SDGs offers an opportunity to develop new knowledge critical for designing, implementing and evaluating the impact of complex development programmes. In this regard, the following opportunities are identified:

— Building a new cohort of scientists and researchers with a deeper appreciation of integrating STI in order to realise the complex development agenda. In this regard, the new knowledge refers to an interdisciplinary and transdisciplinary research agenda that would enable 'innovation in development and innovation for development' as 'learning is needed beyond technologies; innovation is required in our thinking, mindset, management, and policies as much as in our hardware'.[21] Such a research agenda would contribute towards strengthening the science-policy interface,

"The existing policy environment and harnessing STI for SDGs also provide strategic opportunities for furthering the development and implementation of strategies for technology acquisition and deployment fund."

thereby improving the engagement of scientists and researchers with policy makers and practitioners, building new skills that enable scientists to merge STI with the development agenda.

— South Africa has invested in research infrastructures that are critical for the development agenda. The research infrastructures enable South Africa to cooperate and collaborate with like-minded partners on mutually agreed terms in aspects including technology development and technology diffusion. This infrastructure is key in complex data collection, analysis and specifically analysis in support of the SDGs; examples include the Centre for High Performance Computing and the Square Kilometre Array, which provide advanced infrastructure to support the research in priority areas of the various SDGs in this era of big data.

— Based on progress made to date, South Africa has an opportunity to advance cooperation in technology and associated know-how development, transfer and diffusion on mutually agreed terms in line with the resolution of the Addis Ababa Action Agenda. This cooperation would be with the least developed countries

"The existing policy environment and harnessing STI for SDGs also provide strategic opportunities for furthering the development and implementation of strategies for technology acquisition and deployment fund."

(especially with regard to technology transfer), other developing countries and the developed countries as inequality, poverty and unemployment are global challenges, facing different countries albeit to varying degrees. Such cooperation and collaboration also recognises that 'the availability of scientific and technological information and access to and transfer of environmentally sound technology are essential requirements for sustainable development' and that 'there is a need for favourable access to and transfer of environmentally sound technologies'.[22] The innovative technology solutions that South Africa has developed may be considered for availability to relevant technology banks or development partners on mutually agreed terms. These technologies also afford South Africa an opportunity to better participate in the provision of development goods and services pertinent to the global development agenda as well as being relevant to the global south.

— Leveraging STI for SDGs would require member states to be able to monitor progress and evaluate impact over time. In this regard, the STI for the SDG programme of work requires specific indicators that would be used to measure and assess the extent to which STI

is contributing to the realization of the SDGs. The indicators may include how innovative technology solutions are improving access to water, sanitation and energy; how STI is contributing towards improving performance in education, etc. In this regard, South Africa is advancing the development of an indicators' framework that would enable evaluating the impact of STI on human wellbeing, inclusive growth and environmental sustainability, a pertinent matter for the SDGs. Such a framework would also reflect the contribution of STI in advancing evidence-informed decision making and policy advice, as well as strengthening service delivery mechanisms through enhancing innovation readiness and maturity. In this regard, there are opportunities for South Africa to co-develop the framework with willing partners and also to share innovative tools the country has developed and implemented in diagnosing innovation capacity and maturity prior to integrating innovation in the delivery of basic services such as water, energy, etc.

Strengthening coordination in the context of STI for SDGs

The TFM offers an opportunity for UN member states to include STI within the SDG coordination mechanisms, for example, the national SDG coordination committee. Such a committee would be supported by a proposed reference group on STI for SDGs comprised of government departments, the private sector, research institutions and science councils, and the non-profit sector. It is anticipated that the improved coordination would have the following benefits:

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"Despite South Africa having mapped the alignment of the NDP and SDGs, there remains a need to integrate efforts by the non-state sector in reporting and reflecting on progress."

enhancing the STI dialogue within South Africa and with the global South, thereby contributing towards advancing knowledge generation, technology development and innovation for the South by the South;

— Strengthening STI skills and capacity across the different sectors of society, including the three tiers of government responsible for policy and its implementation;

— Improved dissemination of South African research outputs relevant to the SDG agenda through the SDG Knowledge Hub, housed at the University of Pretoria and the Innovation Bridge Portal, which documents innovative solutions in response to specific SDGs;

— Improve deployment and diffusion of appropriate innovative technology solutions, particularly South African technologies in support of the SDGs;

— South Africa's experience in developing and implementing development cooperation projects enables the country to contribute towards enriching the current global discussion on development cooperation, for example, providing alternative models that are more inclusive and contribute towards transforming systems of innovation. Such discussions

include those within the context of the UN's Development Cooperation Forum, whose task includes latest development cooperation trends. South Africa has participated in various bilateral and multilateral cooperation initiatives, enabling it to meaningfully contribute towards supporting a multilateralism that is 'more inclusive, solidarity-driven, more horizontal and less inspired by financial motives';[23]

— South Africa's experience as an STI capacity-building partner in areas including STI indicators positions the country as a partner with like-minded countries to support harnessing STI for SDGs.

Challenges, focusing on barriers and other constraints

National coordination of the SDGs in an inclusive manner remains one of the challenges that needs urgent attention. Despite South Africa having mapped the alignment of the NDP and SDGs, there remains a need to integrate efforts by the non-state sector in reporting and reflecting on progress. The NDP-SDG mapping revealed that there is alignment between the two development frameworks in that of the 169 SDG targets, 96 are fully aligned and 29 are partially aligned to the NDP, that is, 125 of the 169 SDG targets are aligned domestically. The mapping does not unlock opportunities to demonstrate the extent to which the private and non-profit sector are already contributing towards achieving the SDGs using their own resources. Incorporating the private and non-state sector in planning, implementation and reporting would

assist in advancing national implementation, as the SDG agenda is not solely the responsibility of government because education, business and civil society have a role to play. Whilst there is work in progress to address this challenge, it is acknowledged that the current activities tend to be biased towards the government, leading to the marginalisation of the other sectors essential for the realisation of the SDG agenda. Engagement with business may unlock and maximise opportunities in which business can mentor and provide exposure to youth STI entrepreneurs and strengthen their innovative capacity. Such activity would build on existing mechanisms that business and the non-profit sectors are already using to support STI entrepreneurs.

—While acknowledging the progress made in ensuring universal and free access to basic education, particularly at the early childhood development level and classification of some schools as no-fee schools, the outputs of the basic education system require improvement to enable South Africa to strengthen and expand its pipeline for science, engineering, technology (SET) qualifications. This improvement at the level of basic education would include strengthening in particular support to the girl-learner by emulating a similar programme to that of 'Women in Science', the DST initiative that supports and rewards excellent performance by female scientists and researchers.

Inclusion of youths, particularly youths who is not in employment, education or training across the STI value chain, is a challenge that is being addressed through various

mechanisms. However, for these mechanisms to lead to the desired outcomes and impacts, one of the recommendations is to reform the science, technology, engineering and mathematics curriculum, as well as business skills development. This reform may include offering entrepreneurship as a subject at basic education level, and supporting multidisciplinary research to respond to youth development challenges, especially devising youth inclusion instruments such as youth in technology business set-asides.[24]

— Despite the progress made to date, South Africa acknowledges that there is an existing challenge regarding an adequate number of high-end skills to respond to the SDGs. Although notable improvements have been made in SET enrolment that is increasing gradually, it remains low (29.9% in 2015). This gradual increase has implications for the proportion of female SET enrolments (46.2% in 2015, 45.8% in 2014 and 45.5% in 2013). However, the share of female SET graduations is high (50.6% in 2015).[25] In addition, South Africa faces another challenge in the number of critical STI skills shortages at municipal level, the tier of government responsible for local economic development, provision of basic services as well as advancing inclusion through integrated spatial planning frameworks.

— Equitable access to the knowledge infrastructure is a challenge that South Africa continues to face despite considerable STI advances and investments. Various measures have been implemented to improve equitable access and participation, including making funding available – for example, Grassroots Innovation

Fund, the Technology Youth Innovation Fund and technology transfer to small, medium and micro enterprises.

Equitable access is a work in progress as it influences the attainment of inclusive, responsive and transformative systems of innovation that are able to support all innovation initiatives regardless of formality or informality, grassroots or high-end technologies. Equitable access aligns with the principle of 'leaving no one behind' in conceptualising, developing and implementing solutions. Equitable access also refers to essential infrastructure, for example, information and communication technologies. Although South Africa has an approved policy and a dedicated strategy, the South Africa Connect strategy, intended to ensure connectivity for all and also has a relatively high number of cellular phone subscriptions, reliable access to the internet remains a critical challenge. This unfortunately impacts on the manner in which people and businesses transact with each other and access information for individual and national benefit.

Conclusion

The opportunities identified, existing institutional mechanisms, challenges and gaps that South Africa's system of innovation faces have led to the recommendation to develop and implement an STI for SDG action plan within the national SDG implementation framework. Such a framework would be aligned to national strategies and implementation plans, and embed STI in the individual SDGs with the intention to maximise and optimise the integration of STI in SDGs. It is also

"Equitable access to the knowledge infrastructure is a challenge that South Africa continues to face despite considerable STI advances and investments."

envisaged that such a framework could contribute towards a skills development plan that defines critical skills and capabilities for the SDG agenda, for example, big data management, systems thinking and engineering, intellectual property management. The proposed STI for SDG action plan is in line with one of the recommendations of the Addis Ababa Action Agenda and the STI Forum of the TFM. The proposed plan would incorporate a dedicated communications strategy within this action plan, which would contribute towards improving information and knowledge flows in South Africa. This national platform may be supported by structured domestic and regional STI engagements hosted in-between the annual STI Forums of the TFM.

1 National Planning Commission (2012) National development plan 2030, our future – make it work. Report, Government of South Africa: Pretoria; United Nations (2015) Transforming our world: The 2030 Agenda for sustainable development. Available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E (accessed 5 December 2017).

2 National Planning Commission (2012) National development plan 2030, our future – make it work. Report, Government of South Africa: Pretoria; United Nations (2015) Transforming our world: The 2030 Agenda for sustainable development. Available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E (accessed 5 December 2017).

3 United Nations (2015) Transforming our world: The 2030 Agenda for sustainable development. Available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E (accessed 5 December 2017).

4 United Nations (2015) Transforming our world: The 2030 Agenda for sustainable development. Available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E (accessed 5 December 2017).

5 United Nations (2015) Transforming our world: The 2030 Agenda for sustainable development. Available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E (accessed 5 December 2017).

6 Kruss G, Petersen I, Rust J and Tele A (2017) Promoting a science, technology and innovation policy for inclusive development in South Africa. Policy brief, Department of Science and Technology: Pretoria.

7 Department of Arts, Culture, Science and Technology (1996) White paper on science and technology – preparing for the 21st century. Available at https://www.gov.za/sites/default/files/Science_Technology_White_Paper.pdf (accessed 14 December 2017).; Department of Science and Technology (2017) Annual performance plan. Available at http://www.dst.gov.za/images/2017/2017_pdfs/Annual-Performance-Plan-2017_2018.pdf (accessed 13 December 2017).

8 United Nations (2015) Transforming our world: The 2030 Agenda for sustainable development. Available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E (accessed 5 December 2017).

9 Department of Science and Technology (2017) Annual performance plan. Available at http://www.dst.gov.za/images/2017/2017_pdfs/Annual-Performance-Plan-2017_2018.pdf (accessed 13 December 2017); National Advisory Council on Innovation (2016) South African science, technology and innovation indicators. Available at: http://www.naci.org.za/wp-content/uploads/pdf/SA-STI-Indicators-2015.pdf (accessed 28 November 2017).

10 Department of Arts, Culture, Science and Technology (1996) White paper on science and technology – preparing for the 21st century. Available at https://www.gov.za/sites/default/files/Science_Technology_White_Paper.pdf (accessed 14 December 2017); Department of Science and Technology (2017) Annual performance plan. Available at http://www.dst.gov.za/images/2017/2017_pdfs/Annual-Performance-Plan-2017_2018.pdf (accessed 13 December 2017).

11 Department of Science and Technology (2017) Annual performance plan. Available at http://www.dst.gov.za/images/2017/2017_pdfs/Annual-Performance-Plan-2017_2018.pdf (accessed 13 December 2017).

12 Department of Arts, Culture, Science and Technology (1996) White paper on science and technology – preparing for the 21st century. Available at https://www.gov.za/sites/default/files/Science_Technology_White_Paper.pdf (accessed 14 December 2017); Department of Science and Technology (2017) Annual performance plan. Available at http://www.dst.gov.za/images/2017/2017_pdfs/Annual-Performance-Plan-2017_2018.pdf (accessed 13 December 2017).]

13 Department of Science and Technology (2017) Annual performance plan. Available at http://www.dst.gov.za/images/2017/2017_pdfs/Annual-Performance-Plan-2017_2018.pdf (accessed 13 December 2017).

14 Aspen Network of Development Entrepreneurs (2017) South Africa's entrepreneurial ecosystem map. Available at: https://assets.aspeninstitute.org/content/uploads/files/content/upload/ANDE%20ENTREPRENEUR%20ECOSYSTEM%20 MAP%202015 pdf (accessed 11 December 2017).

15 Kruss G, Petersen I, Rust J and Tele A (2017) Promoting a science, technology and innovation policy for inclusive development in South Africa. Policy brief, Department of Science and Technology: Pretoria.

16 Kruss G, Petersen I, Rust J and Tele A (2017) Promoting a science, technology and innovation policy for inclusive development in South Africa. Policy brief, Department of Science and Technology: Pretoria.

17 Department of Environmental Affairs (2014) Unlocking the economic potential of South Africa's oceans. Report, Department of Environmental Affairs: Pretoria.

18 Department of Environmental affairs (2017) Working for water (WfW) programme. Available at: https://www.environment.gov.za/projectsprogrammes/wfw (accessed 12 December 2017).

19 Kruss G, Petersen I, Rust J and Tele A (2017) Promoting a science, technology and innovation policy for inclusive development in South Africa. Policy brief, Department of Science and Technology, March. 2017; Department of Cooperative Governance and Traditional Affairs (2017) The national framework for local economic development: creating innovation driven local economies. Available at: http://www.cogta.gov.za/cgta_2016/wp-content/uploads/2017/11/Walaza.Creating-Innovation-driven-Local-Economies.pdf(accessed 12 December 2017).

20 Department of Science and Technology (2012) Ministerial review committee on the science, technology and innovation landscape in South Africa. Available at: http://www.dst.gov.za/images/FINAL_MINISTERIAL_REPORT_MAY_16__4_.pdf(accessed 13 December 2017).

21 United Nations (2016) Harnessing the Contribution of Science, Technology, and Innovation For Achieving the 2030 Agenda and the 17 Sustainable Development Goals. Available at: https://sustainabledevelopment.un.org/content/documents/21201STI%20for%20SDGs%2010%20member%20group%20STI%20Forum%20final%20clean.pdf (accessed 13 December 2017).

22 Wei L, Kanehira N and Alcorta L (2015) An overview of the UN technology initiatives. United Nations inter-agency working group on a technology facilitation mechanism. Background Paper No. 2015/1. Available at: https://sustainabledevelopment.un.org/content/documents/17%62%20Mapping.pdf (accessed 13 December 2017).

23 United Nations Economic and Social Commission (2017) DCF Argentina high-Level symposium. Available at: https://www.un.org/ecosoc/sites/www.un.org.ecosoc/files/files/en/dcf/dcf-argentina-summary.pdf (accessed 17 December 2017).

24 Kruss G, Petersen I, Rust J and Tele A (2017) Promoting a science, technology and innovation policy for inclusive development in South Africa. Policy brief, Department of Science and Technology: Pretoria.

25 National Advisory Council on Innovation (2016) South African science, technology and innovation indicators. Available at: http://www.naci.org.za/wp-content/uploads/pdf/SA-STI-Indicators-2015.pdf (accessed 28 November 2017).

South Africa's progress on selected SDG 8 and SDG 9 indicators

SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
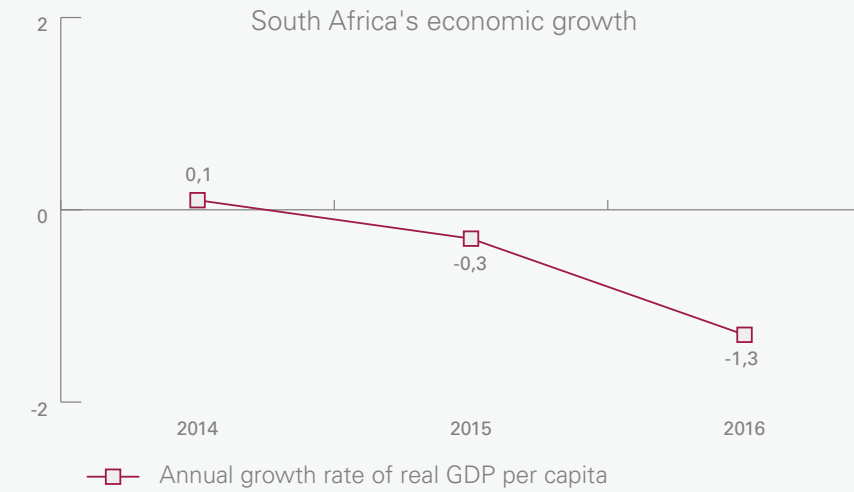
South Africa's economic growth

0,1

-0,3

-1,3

2014 2015 2016

Annual growth rate of real GDP per capita

Fig.12 — Source: Gross Domestic Product (GDP); Mid-year population estimates, Statistics South Africa

Tourism direct as GDP as percentage of total GDP

2.9   3   3

2013 2014 2015
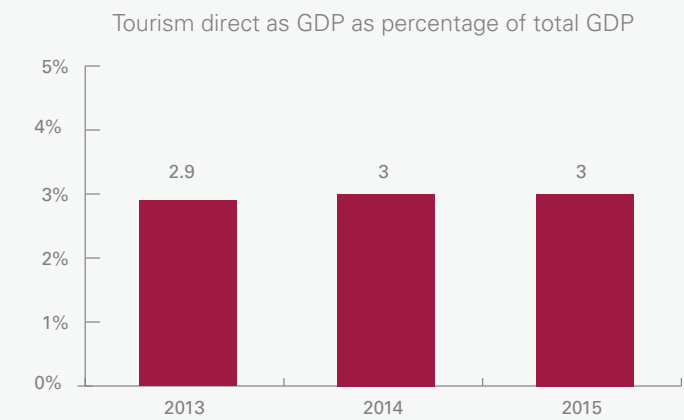
Fig.13 — Source: Tourism Satellite Accounts, Statistics South Africa

Base year=2015

Unemployment rate by sex (15 years and older)

2014   2015   2016

Male: 23,1 27 24,9
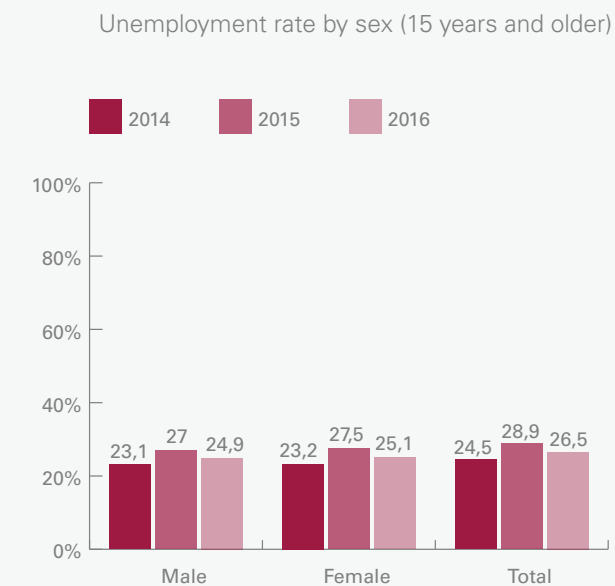Female: 23,2 27,5 25,1
Total: 24,5 28,9 26,5

Fig.14 — Source: Quarterly Labour Force Survey, Statistics South Africa

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

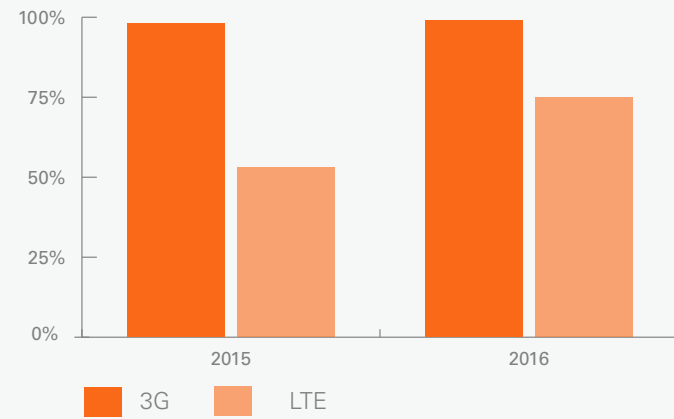Proportion of population covered by a mobile network, by 3G and LTE

Fig.15— Source: Report on the state of the ICT sector in South Africa, Independent Communications Authority of South Africa

Manufacturing value added as a percentage of GDP
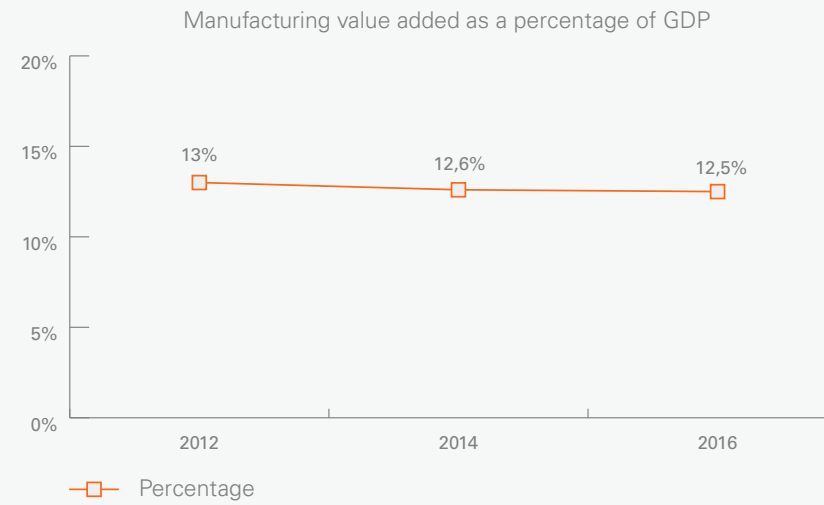
Fig.18— Source: GDP, Statistics South Africa

Number of researchers (in full-time equivalent) per million inhabitants

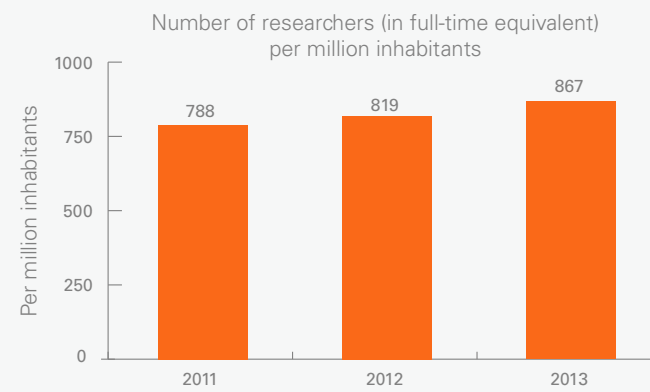Fig.16— Sources: FTE Researchers: HSRC; Research and Development Survey, Department of Science and Technology; Mid-year Population Estimates, Statistics South Africa

Base Year = 2013/14

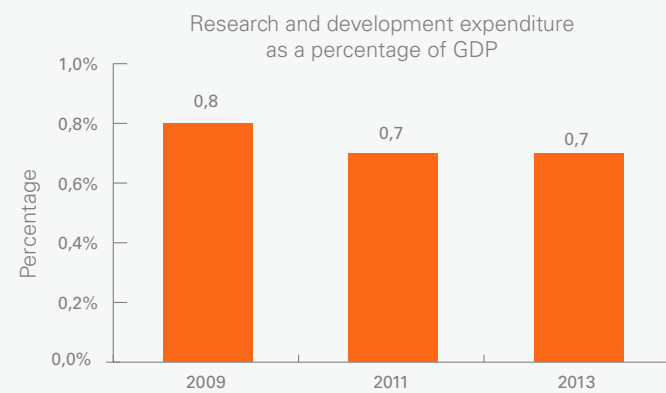Research and development expenditure as a percentage of GDP

Fig.17 — Source: GERD, HSRC; Research and Development Survey, Department of Science and Technology, GDP, Statistics South Africa

Base year = 2013/14

Chapter 4:
The role of development partners

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While recognising that each country has primary responsibility for its own economic and social development, the 2030 Agenda and the Addis Ababa Action Agenda[1] stress that in order to achieve the Sustainable Development Goals (SDGs), all countries and all stakeholders must act together in collaborative partnership encompassing policy and financial means.

The role of international development partners at the national level is to support the response to global challenges taking into account national needs and priorities and, overall, ensuring not only that they work together with the national government and other development partners, as well as promoting the participation of other actors of society, but that they do it better. This includes improving effectiveness and impact through greater coordination and coherence. In order to be more effective in pursuing the SDGs, international development cooperation must be adaptable and responsive to pressing needs, potential crises and evolving policy priorities.

More advanced developing countries, such as South Africa, remain critical for implementing the 2030 Agenda. They still have high numbers of people living in poverty within their borders and are often characterised by high levels of inequality. They have important impacts and influence within their regions and are often a source of capacity and expertise to deal with the challenges faced by both peers and less developed countries. Their South-South cooperation with other developing countries is rising rapidly and represents an important proportion of all international cooperation. As major economies, their impact on global public

goods and challenges, including climate change, is increasingly significant.[2]

South Africa played a key role in the negotiations and processes that led to the development of the 2030 Agenda for Sustainable Development, including its seventeen SDGs, and Agenda 2063. Aspects of these negotiations were informed by the priorities of South Africa's National Development Plan (NDP). South Africa possesses important assets in working towards realising the vision of both the NDP and the SDGs, including strong institutions, a wealth of local capabilities and a capable statistics system, but it also faces considerable challenges regarding implementation, capacity building, financing and engagement.

This chapter explores the role of international development partners in the implementation of the 2030 Agenda as well as the opportunities and challenges emanating from this international cooperation. The cooperation with the European Union (EU) is discussed and the example of education is described in more detail.

The 2030 Agenda and development partners

The 2030 Agenda revolves around five core dimensions: People, Planet, Prosperity, Peace and Partnership. Sustainable development requires a holistic and cross-sector policy approach to ensure that economic, social and environmental challenges are addressed together. In line with this, the approach proposed by the EU places particular emphasis on cross-cutting drivers of development, such as gender equality, youth, sustainable energy and climate action, investment,

"The role of development partners in general has changed over time and even today their roles may differ depending on the situation of the country."

migration and mobility, and seeks to mobilise all means of implementation: aid, investments and domestic resources, supported by sound policies.[3] The following are key components of a comprehensive approach to enhancing the means of implementation in the context of a new global partnership: (i) establishing an enabling and conducive policy environment at all levels; (ii) developing capacity to deliver; (iii) mobilising and making effective use of domestic public finance; (iv) mobilising and making effective use of international public finance; (v) mobilising the domestic and international private sector; (vi) stimulating trade and investments; (vii) fostering science, technology and innovation; and (viii) addressing the challenges and harnessing the positive effects of migration. Furthermore, a true global partnership needs a strong monitoring, accountability and review framework, which must be an integral part of the post-2015 Agenda.[4]

In line with the 2030 Agenda, the new European Consensus on Development, the EU's new development policy, seeks to support the achievement of all 17 SDGs in an integrated manner. The Consensus[5] proposes a framework of international development cooperation for the EU and its member states, but also with other development partners. The objective is to do more, do it better and do it differently.

— 'Do more': systematically integrating the economic, social and environmental dimensions. This requires giving more prominence to key drivers such as gender equality, the youth, sustainable energy and climate action,

investments, migration and mobility; and demonstrating the contribution of development policy to tackle interconnected global challenges, such as conflict, migration, economic growth and jobs, and climate change.

— 'Do it better': fostering a more coordinated approach to development between all stakeholders, promoting joint programming and joint actions and making the most of tools such as budget support, trust funds and blending; and encouraging a cultural shift from inputs to outputs, when it comes to measuring the effectiveness of development actions, focusing on results.

— 'Do it differently': combining official development assistance (ODA) with domestic resource mobilisation and private sector investment, supported by sound policies; and implementing differentiated, better-tailored partnerships with partner countries at different levels of development – including innovative partnership with middle-income countries – and with a broad range of other stakeholders.

The role of development partners in general has changed over time and even today their roles may differ depending on the situation of the country. A very poor country or a country in a post-crisis or post-conflict situation may require different development partner involvement than a relatively stable middle-income country like South Africa.

Already before the start of official relations, the EU provided the equivalent of about €450 million (or ECU,[6] the European currency unit at the time) under the Special Programme for the Victims of Apartheid

between 1986 and 1994 to non-governmental organisations for about 700 projects. Following the first democratic elections in South Africa in 1994, the EU started a comprehensive development assistance programme. Total assistance provided to date amounts to more than €3 billion.

At the beginning EU assistance focused on the improvement of the living conditions of the disadvantaged groups and the strengthening of democratic institutions. Today our cooperation reflects the fact that South Africa is a higher-middle-income country and that our financial contribution represents only a small fraction of Gross Domestic Product and the national budget.

"The world is more complex and interconnected than ever, and so are the challenges we face. In order to eradicate poverty and achieve sustainable development, we need to adopt a more comprehensive and universal approach."

Development cooperation between the EU and South Africa is thus marked by the principles of ensuring that it brings value added through innovation, pilot programmes, capacity development, and the sharing of skills and knowledge. These principles were implemented during the period 2007-2013 and continue to guide the implementation of the Multi-annual Indicative Programme 2014-2020, which sets the objectives for our cooperation for the period under the broader objectives of the Trade, Development and Co-operation Agreement.

"The development landscape is expanding, encompassing more and new actors and innovative solutions. The private sector is increasingly a key partner in fostering more sustainable models of development."

Opportunities

The world is more complex and interconnected than ever, and so are the challenges we face. In order to eradicate poverty and achieve sustainable development, we need to adopt a more comprehensive and universal approach. We have to understand and take into consideration that interventions in one field of action have impacts in other areas. Therefore, our development policy needs to give more prominence to key drivers with cross-cutting transformative potential, such as gender equality, the youth, sustainable energy and climate action, investment, migration and mobility. Women and youths in particular must be seen not just as beneficiaries, but as drivers of development.

The post-2015 Agenda presents a great opportunity to address the interlinked challenges of poverty eradication and sustainable development.[7] The development landscape is expanding, encompassing more and new actors and innovative solutions. The private sector is increasingly a key partner in fostering more sustainable models of development. Combining public and private resources to leverage more investments allows for the stepping up of engagement. This is particularly true in countries such as South Africa with a developed and capable private sector in many areas. Sustainable investments help to diversify economies, link them to regional and global value chains, promote regional integration and trade, enhance local economic value and meet social needs.

Development policy is an essential part of the range of policies to tackle global challenges, manage interdependence and build a better world.

Development policy needs to be coordinated with other policies, including humanitarian aid, trade and regional integration, health, environment, energy, agriculture, fisheries, migration and science, technology and innovation, to deliver more effective results. Sustainable development and poverty eradication are essential to address global challenges in the long run.

Though ODA is only a small fraction of South Africa's budget (below 1%), its value in the country does not come so much from the finance, but from the 'value added' dimension it brings through focusing on innovation, creativity, piloting and risk taking, creating a basis for the replication of successful projects and programmes that can be funded by government resources.

There are number of areas where the support of international development partners can add value in more advanced developed countries:

Domestic public finance

This is by far the largest source of stable and directly available financing for most governments and is therefore the crux of financing for sustainable development, particularly in more advanced developed countries. Moreover, taxation, in terms of both expenditure and collection, is an important component of the social contract that underpins domestic accountability. National governments have the primary responsibility for efficiently mobilising and using public resources, but development partners can play an important role in supporting the strengthening of fiscal institutions, mainstreaming sustainable development in domestic public finance and

making public financial management more efficient and transparent. They can assist in the reinforcement of audit, anti-fraud, anti-money-laundering and anti-corruption measures. International cooperation is crucial to tackle tax evasion and avoidance, and illicit financial flows, including in tax havens.

International public financing

This remains an important and catalytic element of the overall financing available to developing countries. It includes not only ODA but also other official flows, South-South cooperation and triangular cooperation, which have increased significantly in volume and importance in recent years. Although ODA is quantitatively small for developing countries as a whole and even more so in more advanced developed countries, or upper-middle-income countries, such as South Africa, ODA can help leverage other means of implementation, in particular public domestic financing and private sector investment, but also science, technology and innovation. Innovative financing can take many forms and aims to mobilise and deliver resources in a predictable, reliable and efficient way as well as diversify the financial tools dedicated to development. Sources to be explored include international levies and taxes deriving from globalisation gains, carbon taxes, the use of blending facilities and others.

Mobilising the domestic and international private sector

This includes funding from foundations and philanthropy, through the right incentives, including through policy and regulations.

Innovative financial instruments, such as blending, using equity, loans and guarantees can be important for mobilising private investment for policy priorities that support sustainable development and poverty eradication. Blending can be used to leverage private finance for development by sharing the risk and reducing costs. These instruments can contribute to green growth, job creation and innovation as well as support climate action, amongst other things.

Stimulating trade and investments

Trade and investment are key factors for inclusive growth and sustainable development. Each country has the primary responsibility for maximising the potential benefits from trade through good governance, sound policies and a stable regulatory environment favourable to the private sector and to sustainable entrepreneurship, innovation, investment, as well as sustainable supply chain management. This can be facilitated by development partners through Aid for Trade and related capacity building. In this regard, special attention should be given to regional and inter-regional trade agreements and the integration of regional and global value chains. Trade policy, including trade and investment agreements must appropriately integrate sustainable development including its social and environmental dimensions. Development partners should also coordinate their development cooperation programmes with trade policy tools in support of the implementation of the provisions in trade agreements relating to trade and sustainable development.

"STI is vital to achieving poverty eradication and sustainable development as well as to identify and address pressing global societal challenges. In order to improve evidence-based decision making, there is a need to improve the science policy interface."

"Successful implementation requires forging stronger partnerships beyond governments. Development partners should do their utmost to expand partnerships with the private sector, civil society, including trade unions and employers' organisations, multilateral organisations, academia, diaspora groups and others."

Fostering science, technology and innovation (STI)

STI is vital to achieving poverty eradication and sustainable development as well as to identify and address pressing global societal challenges. In order to improve evidence-based decision-making, there is a need to improve the science-policy interface. All countries should increase bilateral, regional and multilateral cooperation on STI to promote the implementation of the SDGs. Middle-income countries have an important role to play in this respect. Development partners should effectively engage with them in cooperation on STI as well as capacity building. Although the public sector also plays an important role, most technologies are owned by the private sector and the importance of multi-stakeholder partnerships should be stressed in this regard.

Challenges

The success of the post-2015 Agenda requires policy coherence at all levels. Countries at all levels of development should ensure that their policies contribute coherently to their sustainable development priorities, both domestically and internationally. In addition, all developed, upper-middle-income countries and emerging economies

should commit to assessing the impact that their policies have on poorer countries. Policy coherence requires adequate coordination, regular dialogue between stakeholders and assessment of policies.[8] In this context, developing policies should integrate efforts in line with the 2030 Agenda and the Addis Ababa Action Agenda,[9] the Sendai[10] framework on disaster risk reduction and the Paris agreement on climate change, all of which provide a binding framework with universal commitments. Implementing a development cooperation policy also entails supporting the implementation of the provisions in trade agreements relating to trade and sustainable development.[1]

At country level, this requires that development partners pursue enhanced coordination and synergies, including through joint programming, reducing segmentation, increasing their collective impact and bringing together their resources and capacities. Joint programming should be guided by quality analysis of the country context and take account of country- and sector-specific priorities and policies and of available means of development financing, in line with the Addis Ababa Action Agenda.

Joint actions can be implemented at national, regional or international level. Successful implementation requires forging stronger partnerships beyond governments. Development partners should do their utmost to expand partnerships with the private sector, civil society, including trade unions and employers' organisations, multilateral organisations, academia, diaspora groups and others, and to ensure that they take full advantage of the different actors' comparative advantages.

National governments have the primary responsibility for implementing the 2030 Agenda. Development partners should put the emphasis

on country ownership, partnership and dialogue, in order to contribute to greater effectiveness and inclusiveness. The achievement of the SDGs will also depend on the active involvement of local authorities, the private sector and civil society. Development partners should promote open government dialogues with all stakeholders at the planning, implementation and review stages.

The policy dialogue between countries and development partners is essential. The partner countries must have the capacity and the political will to implement the right policies, notably when it comes to issues such as good governance, corruption and human rights. Successful pilot projects, exchange of best practices and regular policy dialogue on different levels can contribute to the achievement of the development objectives through the implementation of the right policies.

To be effective, the engagement of international partners must vary according to the capacities and needs of developing countries and focus where it is most needed and can have most impact. More advanced developing countries need fewer or no concessional forms of assistance, but are crucial for the implementation of the 2030 Agenda. Hence engagement must be innovative, go beyond financial cooperation and include development policy dialogue. It should take into account the diversity of middle-income countries and the need for tailored approaches. Cooperation with more advanced developing partners can take place in the partner countries themselves, in their respective regions, in third countries, or globally. It should promote best practice, technical assistance and knowledge sharing, as well as South-South and triangular cooperation to support less developed countries in implementing the 2030 Agenda.

The European Union and development cooperation in South Africa

In addition to promoting the mobilisation of resources for development in areas with significant transformation potential for sustainable development, including sustainable agriculture, clean energy, resilient infrastructure, health, the green and circular economy and digitalisation, development partners should strive to ensure that international companies with supply chains in developing countries work in close partnership with their public and private stakeholders, and promote fair and ethical trade.

And last but not least, the area of education and skills – which is the basis of any modern society – offers a wide range of cooperation possibilities. Below are a several examples of South Africa– European Union cooperation in this area.

The overall objective is to assist the government in transforming the education, training, and innovation system so that it can contribute to improved economic performance of the country. Specific objectives are: (i) Teaching and learning at pre-school and primary school level improved; (ii) Access to and improvement of the quality of technical and vocational education and training and community colleges; (iii) Improvement of higher education institutions' capacity, and graduate, postgraduate and research output; (iv) Capacity for teacher education within higher education institutions strengthened; and (v) The functioning of a coherent and coordinated national system of innovation improved.

Through its various initiatives and programmes of support, the EU is making a significant contribution to this focal sector of South Africa-European Union collaboration, but also to SDG 4: Ensure inclusive and quality education for all and promote lifelong learning, including virtually all of the SDG targets for Goal

Primary Education Sector Policy Support Programme in South Africa

The Primary Education Sector Policy Support Programme, worth €122.68 million, aimed to improve learner performance in literacy and numeracy at primary school level. It focused on three main areas – expanding access to quality early childhood development opportunities (Reception Year or pre-school education), especially for poor communities; accelerating the provision of learning and teaching support materials to the poorest primary schools; and improving the initial teacher education system to attract higher numbers of capable primary school teachers, particularly those able to teach in the African languages. With the EU's support, some of the main achievements were:

— The number of children enrolled in pre-school classes attached to public schools (Reception Year) increased from 524,000 in 2008 to 735,000 in 2012;

— Important resources for improved implementation of the curriculum (revised curriculum and assessment policy statements, workbooks for learners and a national catalogue of approved textbooks) were developed and provided to public primary schools;

— Large-scale assessments of learning outcomes in key subjects were undertaken (six million learners were assessed in 2012);

— The number of public universities involved in training of teachers for the early grades increased from 13 in 2008 to 20 in 2012;

— Student enrolment in such programmes increased from approximately 5,000 in 2008 to 14,000 in 2012 (also owing to a government bursary scheme for student teachers).

Early Childhood Development (ECD) and Reception Year

The EU-funded Primary Education Sector Policy Support Programme impacted upon learner performance and Action Plan achievement through its results in the programme area of ECD and the Reception Grade. The consequences of EU support being directed to provision at this level has made an undoubted contribution, predominantly in terms of large numbers of better trained teachers, but also through the supporting activities. The evidence is most apparent in the Grade R classes in the schools themselves, embodying an enjoyment of education that, hopefully, will permeate through the early years of basic education and beyond.[12]

Innovation in Basic Education

The Funda UJabule school ('Learn and be joyful', in isiZulu) is a collaboration between the University of Johannesburg and the Department of Education in Gauteng and was supported through the EU's Primary Education Sector Policy Support Programme.[13]

Undergraduate students taking the University of Johannesburg's Foundation Phase Education degree spend regular blocks of time observing and assisting at Funda UJabule throughout the year. In turn, the primary school teachers act as mentors to the student teachers. They become adjunct teacher educators of the University, working with the lecturers to create a comprehensive teacher education programme. The unique school environment means the University can research good teaching practices. At Funda UJabule English is introduced as a language of teaching and learning in Grade R in conjunction with the local languages Sesotho and isiZulu.

Working towards inclusive education in South Africa

South Africa's education system unfortunately continues to fail some children.[14] Only half of learners in Grade 1 make it to Grade 12, and many fall short of exam requirements. The EU has been supporting the Departments of Basic Education (DBE) and Department of Higher Education and Training (DHET) since 2004 to move towards inclusive education for all, with specific measures to support learners with disabilities and from disadvantaged backgrounds. The EU funded the development of basic policies, systems and structures, including:

— A Policy on Screening, Identification, Assessment and Support which ensures that every learner can attend and receive support in his or her local neighbourhood school;

— The concept of universal design and access in the School Infrastructure Norms;

— Guidelines for Full-Service/Inclusive Schools and for Special Schools as Resource Centres Guidelines for Curriculum Differentiation;

— The establishment of School-based and District-based Support Teams that maximise support delivery at school level through multi-sectoral interventions

Workbooks for all learners

Literacy and numeracy rates remain a cause for concern in many South African schools, despite slight improvements in recent years. One of the fundamental issues has been a lack of basic classroom resources such as workbooks. With EU support, the DBE has been able to address and turn around this critical area since 2012.

A workbook project, funded by the DBE through the EU's Primary Education Sector Policy Support Programme, aims to supply numeracy and literacy workbooks to every child from day one in Grade R to Grade 9. Carried out by a joint venture of three firms – printing companies Lebone Litho and Paarl Media, and delivery firm UTI – it prints and delivers fifty-six million workbooks each year to over 24,000 schools, the majority in rural areas. In the process 3,600 permanent jobs across the production chain, from printing and packing to warehousing and distribution were created, with as many as 5,000 people at peak times. The books are available in all eleven of South Africa's official languages, plus braille and large print.

Developing the vocational pathway

Inclusive education has been a strong focus in the Primary Education Sector Policy Support

Programme, and also in the follow-up Teaching and Learning Sector Reform Contract. Although teachers are being trained to adapt the academic curriculum for learners who experience barriers to learning, there is still a need for a more structured vocational curriculum. Many learners with an interest in and aptitude for vocational education and training currently leave Grade 9 without a nationally-recognised exit-level qualification. Throught the PrimEd programme, the EU assisted DBE to develop a new vocational education policy, with an exit-level qualification, as well as forty-six learning programmes. Of these, twenty-six are technical occupational programmes with an exit-level qualification at the end of basic education. In addition, DBE was also able to develop programmes for learners with a severe intellectual disability, as well as a policy framework and curriculum for learners with a profound intellectual disability.

The vocational education programme is not only being introduced for the benefit of learners with disabilities, but aims to create differentiated curriculum pathways in senior primary and in secondary schools for learners who have an interest and aptitude in vocational education. It is considered a critical contribution of the Basic Education sector towards addressing the skills shortages of the country. The EU currently also co-funds three projects with civil society organisations focusing on inclusive education.

After the conclusion of the Primary Education Sector Policy Support Programme, a new programme focusing on the higher education sector, but with direct benefits for basic education,

was signed between the EU and South Africa. The €26 million Teaching and Learning Development Sector Reform Programme[15] commenced in 2015 and supports the implementation of DHET's Teaching and Learning Development Capacity Improvement Programme (TLDCIP). The TLDCIP focuses on strengthening the university-based teacher education system to better enable it to deliver quality professional development programmes for early childhood development (0-4 years) educators, primary school teachers, special needs teachers, technical and vocational education and training lecturers, community education and training lecturers, and the professional development of university academics. Universities are the main beneficiaries and the faculties/schools of education within the universities are the main target groups for capacity improvement in the range of areas of teacher education identified for intervention.

Some achievements to date include:

— The Draft Policy on Minimum Requirements for programmes leading to Qualifications in Higher Education in Early Childhood Care and Education (birth – four) for Educators and Practitioners, was published in March 2016;

— In 2013, 5 920 teachers graduated who were able to teach primary school specialisations. In 2014, 6 746 teachers who were able to teach primary school specialisations graduated, an increase of 14%; Three agreements were signed to establish national centres for the development of professional qualifications for special needs teachers;

— Agreements have been reached with ten universities to develop and offer professional qualifications for technical and vocational education training lecturers, supported by funding agreements;Agreements to collaborate on programme development are in place with ten universities, supported by funding agreements;

— DHET has signed sixteen agreements which involve twenty-three South African universities and one United Kingdom-based university as partners to undertake sixteen research projects in post-school education and training. All of these projects include multiple partners, ranging from one additional to up to ten partner universities per project, and in some instances civil society organisations.

Erasmus Mundus and higher education

In addition to the bilateral Teaching and Learning Programme discussed above, the EU makes a significant contribution to higher education in South Africa, through the current Erasmus+ programme, and its predecessor the Erasmus Mundus programme.

Erasmus Mundus was designed as a cooperation and mobility programme in the field of higher education aimed at enhancing the quality of European higher education and promotion of dialogue and understanding between people and cultures through cooperation with third countries. In addition, it contributed to the development of human resources and the international cooperation capacity of higher education institutions in developing countries by increasing mobility

between the European Union and these countries. This programme was intended as the major vehicle for cooperation in higher education between Europe and Africa in the EU Strategy for Africa, and African countries were invited to consider the creation of specific Erasmus Mundus 'windows'.

The overall objectives of Erasmus Mundus partnerships between South African and European higher education institutions (HEIs) were to support South Africa's efforts in fostering sustainable development, including pursuit of the Millennium Development Goals and the eradication of poverty and inequality, through mutual intellectual exchanges and cooperation between European and South African HEIs, and to improve political, economic and cultural links between the EU and South Africa. In South Africa the programme has been implemented with greater involvement of and cooperation between the EU Delegation and the DHET. DHET has sought to use programmes such as the Erasmus Mundus to respond to the peculiar challenges and transformation objectives in South Africa. These include, among others, redress, equity and quality within the system of higher education. Over time, these transformation objectives have formed an integral part of the eligibility requirements. From 2011 to 2016, over five rounds, a total of €21.8 million was committed for mobility from South Africa to Europe, through fourteen partnerships. These partnerships yielded 827 beneficiaries.

Erasmus+ (2014-2020)

Erasmus+ is the EU programme which supports projects, partnerships, events and mobility in the areas of education, training, youth and sport in the

Erasmus+ Programme and partner countries. The programme, which runs for seven years, provides funding opportunities for cooperation in all these areas, both among European countries and between European countries and partner countries throughout the world.

Erasmus Mundus Joint Masters' Degrees: In the four selections in 2014, 2015, 2016 and 2017, four of the selected Erasmus Mundus Joint Masters' Degree programmes have involved institutions from South Africa as full partners. During this time South African HEIs participated as associated partners in fourteen Erasmus Mundus Joint Master Degree programmes. From 2014-2017, 43 students have been awarded Erasmus Mundus Joint Master Degrees scholarships. The capacity building component in the field of higher education (CBHE) of Erasmus+ in South Africa has the largest allocation, that is, approximately €13 million of the total budget for the 2014-2020 period. The CBHE action aims to support the modernisation, accessibility and internationalisation of higher education in the partner countries. In the period 2014 – 2017, over three rounds of calls, a total of thirteen projects were funded with a total value of almost €10 million.

Under the third Erasmus+ component - International Credit Mobility - 221 projects have been selected, which translates into 1,224 mobilities. Of these, 771 mobilities were outgoing to Europe and 453 incoming to South Africa. Jean Monnet actions, which promote European studies, have resulted in the creation of one Jean Monnet Chair and three projects in 2014, 205 and 2017

"International development partners have an obligation to ensure that both their internal and external development policies as well as the support they provide fully aligns with the 2030 Agenda."

Concluding remarks

International development partners have an obligation to ensure that both their internal and external development policies as well as the support they provide fully aligns with the 2030 Agenda. Additionally, they also need to strive to make sure that the above are consistent with other development agendas (national or regional) that might be governing each country's policies. Their role as development partners is to support national stakeholders in fulfilling their responsibility to strengthen their national policies and governance for the sustainable provision of essential services. They should put a strong focus on the protection of the most vulnerable. In more advanced developing economies the role of development partners should focus on value-added tailored interventions, planned and delivered in a participatory and coordinated matter, in line with country priorities and making the most of the comparative advantages of all partners.

[1] Resolution adopted by the United Nations General Assembly (2015a) Addis Ababa action agenda of third international conference on financing for development, (UNGA A/RES/69/313), 27 July.

[2] Secretary General and United Nations Economic and Social Council (ECOSOC) (2016) Operational activities for development segment (OAS). Quadrennial Comprehensive Policy Review (QCPR).

[3] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (2016a) Next steps for a sustainable European future: European action for sustainability. (COM(2016) 739 final), 22 November.

[4] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (2015a) A global partnership for poverty eradication and sustainable development after 2015. Annex 1, (COM(2015) 44 final), 5 February.

[5] Communication from the from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (2016b) Proposal for a new European consensus on development: our world, our dignity, our future. (COM(2016) 740 final), 22 November.

[6] The European Currency Unit (ECU) was a basket of the currencies of the European Community member states, used as the unit of account of the European Community before being replaced by the euro on 1 January 1999, at parity.

[7] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (2015b) A global partnership for poverty eradication and sustainable development after 2015. Annex 1, (COM(2015) 44 final), 5 February.

[8] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (2015c) A global partnership for poverty eradication and sustainable development

after 2015. Annex 1 (COM(2015) 44 final), 5 February.

[9] Resolution adopted by the United Nations General Assembly (2015b) Addis Ababa action agenda of third international conference on financing for development. (UNGA A/RES/69/313), 27 July.

[10] Resolution adopted by the United Nations General Assembly (2015) Sendai framework for disaster risk reduction 2015–2030. (UNGA A/RES/69/283), 23 June.

[11] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (2015) Trade for all. Towards a more responsible trade and investment policy. (COM(2015)497), 14 October.

[12] Douse M, McBride R and Nyamatcherenga G (2017) Primary education sector policy support programme (PrimEd SPSP) Evaluation. AECOM International Development Europe SL.

[13] Capacity4Dev (2017a) Teaching teachers – an innovative primary school set-up in Soweto. Available at: https://europa.eu/capacity4dev/articles/teaching-teachers-innovative-primary-school-set-soweto. (accessed 29 January 2018).

[14] Capacity4Dev (2017b) Working Towards Inclusive Education in South Africa. Available at: https://europa.eu/capacity4dev/articles/working-towards-inclusive-education-south-africa (accessed 29 January 2018).

[15] Financing Agreement between the European Commission and the Republic of South Africa (2015) Teaching and learning sector reform contract. Agreement No DCI-AFS 037-518, 13 August.

South Africa's progress on selected SDG 10 and SDG 11 indicators

Household income growth rates of the bottom 40% and South Africa

Income growth rate(5)

30%

22,0   18,9

15%

7,8

0%

-2,6

-15%

-30%

2009 - 2011   2011 - 2015

■ Bottom 40%   ■ South Africa
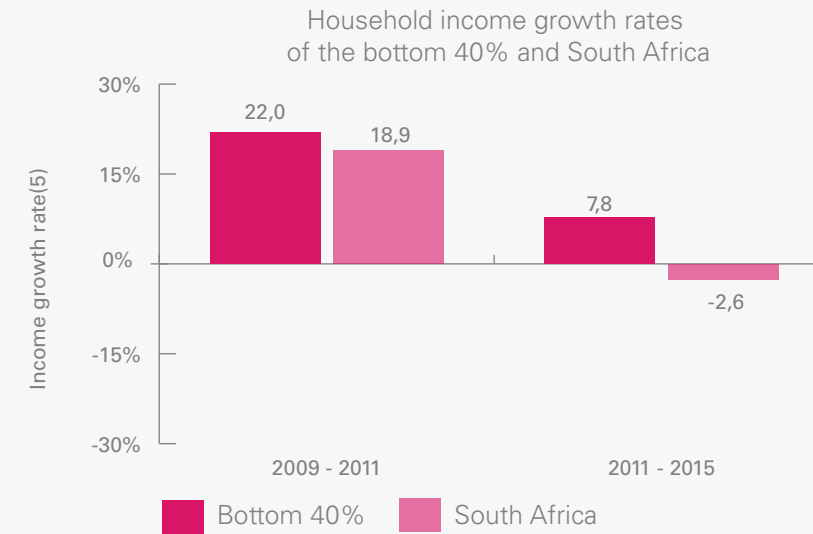
Fig.19 — Source: Income and Expenditure Survey, Statistics South Africa

Base period = 2011-2015

Labour share of GDP

Percentage

100%

80%

60%

46,6   47   2016

40%

20%

0%

2014   2015   2016
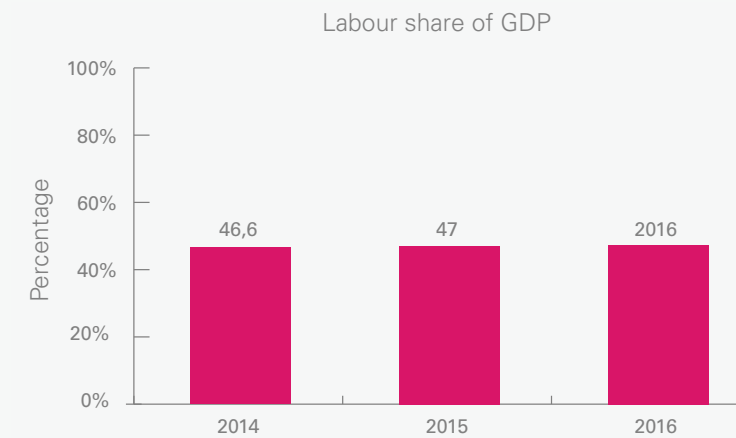
Fig.20 — Source:Quarterly Labour Force Survey; GDP, Statistics South Africa

SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Percentage of urban residents having access
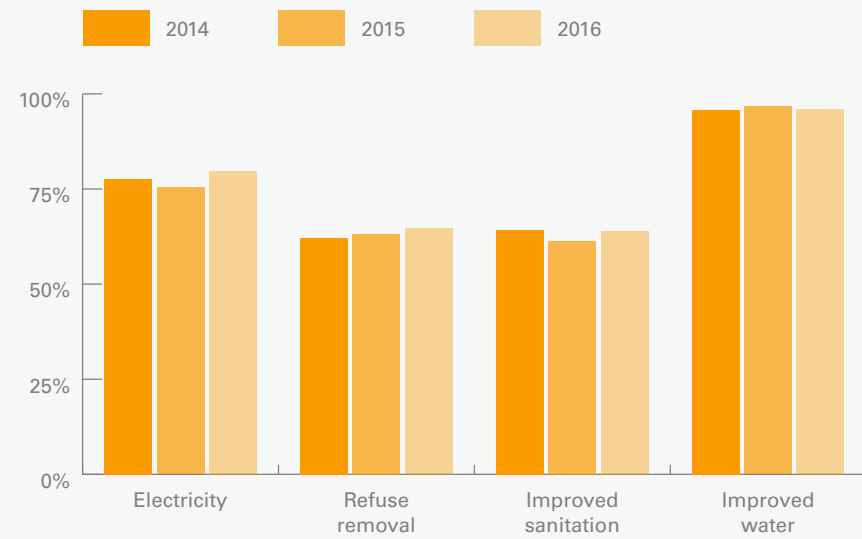to basic services within informal dwellings

Fig.21 — Source: South
African Waste Information
System, Department of
Environmental Affairs

Base Year = 2015

Percentage of urban population
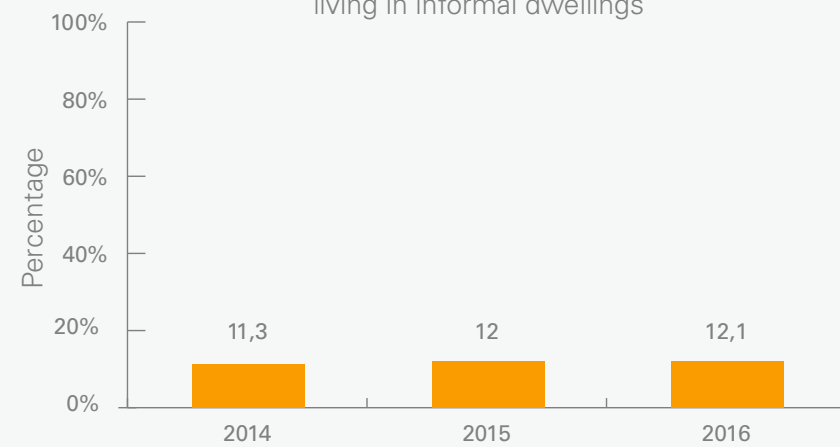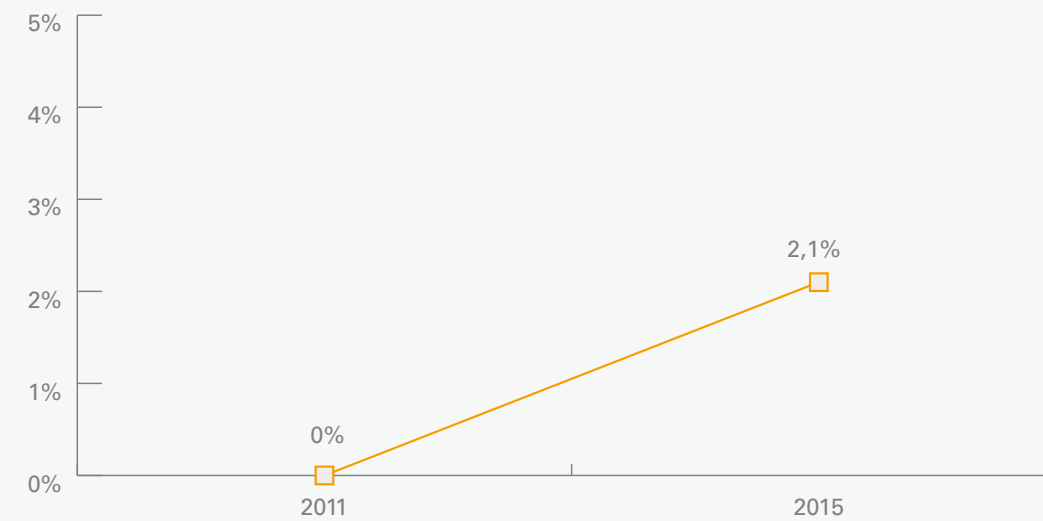living in informal dwellings

Fig.22 — Source: General
Household Survey, Statistics
South Africa

Percentage of municipal waste generated that is recycled

Fig.23— Source: General
Household Survey, Statistics
South Africa

Chapter 5:
The role of researchers

Willem Fourie

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In their recent report on the role of universities in implementing the Sustainable Development Goals (SDGs),[1] the United Nations Sustainable Development Solutions Network highlights the critical role of research. Researchers – based at universities and elsewhere – should assist governments and broader society with better understanding the challenges addressed by the SDGs, localising the SDGs, developing solutions, evaluating responses and supporting further operationalising the SDGs.[2]

This is certainly also the case in South Africa. Its extensive research infrastructure harbours the potential to inform and strengthen the implementation of the SDGs, and to support efforts aimed at maximising the impact of interventions. Yet linking research and policy is relatively complex. In this chapter I outline key elements of South Africa's research infrastructure, highlight challenges to harnessing research for the implementation of the SDGs, and conclude with suggestions on addressing some of these challenges.

South Africa's research infrastructure

South Africa has an extensive research infrastructure. Even though this is difficult to quantify, researchers based at South African research entities exert a major influence on the implementation of the country's development priorities through research, teaching, advisory services and consulting.

Much, if not most, of the work done at South African research entities is of direct relevance

for the implementation of the SDGs. Illustrative examples can be found amongst participants in the South African Research Chairs Initiative (SARChI Chairs), the Department of Science and Technology and the National Research Foundation's Centres of Excellence (DST-NRF CoEs), as well as amongst research entities of various national government departments.

The South African Research Chairs Initiative was established in 2006 to 'attract and retain excellence in research and innovation at South African public universities'.[3] SARChI Chairs are typically long-term investments of up to fifteen years. In an NRF review of the initiative, it was found to be successful in retaining and building research excellence, and that it led to a marked increase in postgraduate students and high-impact research output.[4]

The close to 200 approved and filled SARChI Chairs essentially cover all the SDGs. SDG 4 (Quality education), for example, is covered by numerous SARChI Chairs that focus on numeracy and mathematics education. The coverage of SDG 3 (Good health and wellbeing) includes chairs that focus on malaria, HIV, cardiovascular diseases and the governance of health systems. SDG 6 (Clean water and sanitation) is covered by chairs that focus on wastewater treatment and water quality, whereas SDG 8 (Decent work and economic growth) is included in the mandate of chairs that focus on, for example, the economics of social policy, econometric modelling and economic development.

The first *DST-NRF Centres of Excellence* (CoEs) were launched in 2004 and are aimed at creating nodes of research excellence in which resources

are pooled for maximum effect. CoEs are typically larger groupings of researchers than SARChI Chairs. In many cases, a CoE includes a virtual community of experts, and the institutional arrangement of Coe's includes co-hosting arrangements. The DST-NRF CoE in Food Security, for example, is co-hosted by the University of Pretoria and the University of the Western Cape.[5] This CoE covers a large number of the targets included in SDG 2 (Zero hunger). The DST-NRF CoE for Integrated Mineral and Energy Resource Analysis[6] is co-hosted by the University of Johannesburg and the University of the Witwatersrand, and much of its research is of relevance for SDG 7 (Affordable and clean energy). Some CoEs pool together an even larger group of experts, which is reflected in its hosting structure. The DST-NRF CoE in Catalysis[7] focuses on synthesis gas conversion and paraffin activation, and includes partners from across South Africa. The DST-NRF Centre of Excellence in Tree Health and Biotechnology,[8] focussing on topics related to SDG 15 (Life on land), is managed as a partnership between six institutions.

In addition to research done at South Africa's twenty-six public universities, research entities *affiliated with national government departments* produce a large volume of research relevant to the implementation of the SDGs in the country. The South African Medical Research Council,[9] for example, is affiliated with the national Department of Health, and produces internationally

acknowledged research on topics ranging from HIV/AIDS, tuberculosis and non-communicable diseases to research on biostatistics and health systems. Entities within the Department of Science and Technology include the Council for Scientific and Industrial Research (CSIR)[10] and the Human Sciences Research Council (HSRC).[11] In its research on energy,[12] the built environment[13] and health,[14] the CSIR covers numerous SDGs, whereas the HSRC's research on, for example, democracy and governance[15] covers SDG 16 (Peace, justice and strong institutions), with its research on human and social development[16] addressing issues of inequality (SDG 10). Also, other national government departments have affiliated research entities that conduct SDG-relevant research – such as the Agricultural Research Council.[17]

When surveying the research landscape, the primary challenge seems to be not the production of research relevant to the implementation of the SDGs, but much rather the co-ordination and dissemination of such knowledge. The next section outlines selected challenges, and the concomitant solutions, to using research for evidence-informed policy making.

Challenges to using research to inform SDG implementation

The SDGs are both ambitious and comprehensive. Their effective

implementation depends on inclusive partnerships and policies that are informed by the most recent and reliable evidence. In many respects, as indicated above, South Africa has never been in a better position to implement these ambitious plans. This is certainly the case when one considers the growth in South African research output and innovation. In theory, South African development actors have never had access to so much African research and innovation.[18] The same goes for research on Africa: as the scientific community continues to expand and increase the quality and impact of its research, so the body of research on Africa by research from outside Africa is also growing.[19]

"When surveying the research landscape, the primary challenge seems to be not the production of research relevant to the implementation of the SDGs, but much rather the co-ordination and dissemination of such knowledge."

Yet despite the optimism expressed above, linking policymakers with SDG-research evidence remains difficult. To get a sense of the complexity of the challenges, it is helpful to consider scholarship on evidence-informed policy making. Its genesis should be sought in the rise of evidence-based medicine (EBM). Already in the early 1970s EBM acknowledged the extent of

"Yet despite the optimism expressed above, linking policymakers with SDG-research evidence remains difficult."

Photo by — Wellington Rodrigues
Available at: http://www.unsplash.com

the challenge (Oliver et al., 2014a:1).[20] Since then, more general approaches to address the challenges have emerged. Key amongst these is scholarship on evidence-based policy (EBP). A review of the literature, both amongst those who focus on EBM and research who work more broadly on EBP, reveals a number of cross-cutting barriers to the uptake of research into crafting and implementing SDG policies.

The first is the *complexity of evidence*. Researchers easily assume that peer-reviewed journal articles or book chapters are the only, or at least the most important, sources of evidence. Such views are ignorant of the different sources of evidence on which policy-makers need to rely. Head (2008:4-7) helpfully distinguishes between three sources of evidence.[21] 'Rigorous scientific and technical analysis' is one form of evidence. But policy-makers also rely on other sources of evidence, namely practical experience and 'political knowledge'.[22] The latter includes the knowledge necessary to identify politically viable policies, forging appropriate alliances, articulating and communicating policies in the appropriate manner, and 'negotiating trade-offs and compromises'.[23] Without combining these three forms of evidence, the successful formulation and implementation of a policy is unlikely, if not impossible.

This complexity, however, also goes a level deeper. Within each of these forms of evidence one is also faced with different and at times competing sources, methodologies, perspectives and ideologies. Evidence is always about 'contested claims about what counts'.[24] Whereas Junnti and colleagues restrict this definition of evidence to scientific

knowledge, I would argue – in line with Head – that practical and political knowledge also count as evidence, and that these forms of evidence are also contested.

A second barrier is the *absence of personal relationships.* In their agenda-setting study, Innovaer and colleagues identified personal contact as the most important 'facilitator' for the update of research into policy making, and its absence as the most important barrier.[25] In their analysis of the literature Oliver and colleagues (2014a:2) similarly identify the importance of personal contact.[26] In some of the studies this is referred to as the perceived 'gulf' between researchers and policy makers.[27] Lorenc et al. emphasise the concept 'credibility' to describe the type of personal relationships that facilitate the update of research evidence into policy making. Credibility, in their view, 'refers less to the methodological or substantive characteristics of the research itself than to the personal authority of the individuals putting it forward, particularly senior academics', as academics and academic institutions are typically seen as 'neutral and disinterested'.[28] It seems plausible also to include geographical proximity as possible facilitator for personal relationships.

Some barriers relate to the research process itself. Peer-reviewed research is a time-consuming endeavour. Research timeframes are often at odds with the urgency with which policy makers need to address and respond to challenges in their environment. It is therefore not surprising that both the broad-ranging systematic reviews of Oliver et al. (2014b) and Innovaer et al. (2002) identify *lack of timeliness* of research as a key barrier.[29] A

further barrier inherent in the research process is the *perceived lack of relevance of research.* It is important to add the qualifying 'perceived', as the way in which research is communicated rather than the topic of research projects may lead to the perception that research is irrelevant. In this regard, Lavis et al. emphasise the need to use research to develop 'actionable messages for decision makers'.[30] These decision makers, particularly those that ascribe to New Public Management, are interested in research that can ultimately 'deliver the goods' and provide 'value for money'.[31]

Other barriers relate to factors inherent to the policy-making process itself. Within the context of the sophisticated Canadian public service, Howlett (2009:161ff) highlights inadequate *analytical capacity.*[32] Time pressures, the complexity of the challenges to which policy makers need to respond, and the sheer volume of available evidence requires analytical capacities that most, if not all, policy-making institutions cannot provide at scale. Hunsmann (2012: 1481) identifies an additional layer of complexity when he shows that policy responses and even the update of research evidence is also hampered by the 'complexity and perceived infeasibility' on the side of policy makers.[33] In some cases, it might happen that the enormity of the challenge that needs to be addressed leads to the assumption that complex solutions are needed, even when research evidence indicates the opposite. On a practical level, policy makers are often also faced with *budgetary constraints.*[34] The perceived cost of a particular evidence-based intervention – especially within resource constrained contexts – is often a barrier detrimental to the uptake of research evidence.

The way forward: responses

The scale and complexity of using research to inform policy making should of course not discourage attempts aimed at linking policy makers with SDG-relevant research. In this concluding section, two responses are suggested.

First: existing institutions, institutional mechanisms and institutional resources should be strengthened. The incorporation of the SDGs into research agendas, and linkages between policy makers and SDG-relevant research is not in the first instance a matter of inadequate institutions or capacity. If anything, the potential impact of existing institutions, institutional mechanisms and institutional resources should be optimised by better co-ordination. In this regard, it is illuminating to reflect on the implications of the Policy Coherence for Sustainable Development movement. According to the proponents of this movement, improved coordination within existing systems should precede the creation of additional institutions or structures.

Second: digital technologies have the potential to improve co-ordination within national governments, but also between governments and producers of SDG-relevant research. However, our experience at the South African SDG Hub has shown that digital platforms alone should not be viewed as simple or as a panacea for linking policy makers with the evidence needed to design and implement transformative policies. On the one hand, very many digital platforms already exist. The Directory of Open Access Repositories, maintained by SHERPA Services at the University of Nottingham, for example, lists 155 African knowledge repositories. Of these repositories, two are classified as aggregating repositories, eight are disciplinary repositories, and two are government repositories. The remainder and the

majority of the repositories, 143, are classified as institutional repositories and contain mostly African universities' repositories. The challenge seems to be not to duplicate, but to use these repositories as the basis for identifying evidence relevant for specific audiences.

On the other hand, online platforms should not be regarded as complete solutions. Our experience at the South African SDG Hub has shown that the need for face-to-face, or social, dissemination of evidence is still needed. This affirms the literature on evidence-informed policy making, which emphasises the importance of personal relationships and resultant trust between different actors for linking evidence and policy. Even the potential impact of artificial intelligence would in all likelihood be moderated by the need for social interaction.

"The incorporation of the SDGs into research agendas, and linkages between policy makers and SDG-relevant research is not in the firs instance a matter of inadequate institutions or capacity. If anything, the potential impact of existing institutions, institutional mechanisms and institutional resources should be optimised by better co-ordination."

¹ Kestin T et al. (No date) Getting started with the SDGs in universities: a guide for universities, higher education institutions, and the academic sector. Sustainable Development Solutions Network, Australia, New Zealand and Pacific Edition.

² United Nations Sustainable Development Knowledge Platform (2017) Higher education sustainability initiative. Available at: https://sustainabledevelopment.un.org/content/documents/17374HESI_2017_Report.pdf (accessed 27 March 2018).

³ National Research Foundation (2018) South African Research Chairs Initiative.
Available at: http://www.nrf.ac.za/division/rcce/instruments/research-chairs (accessed 27 March 2018).

⁴ National Research Foundation (2012) Five year review of the South African research chairs initiative (SARChI).
Available at: http://www.nrf.ac.za/sites/default/files/documents/Review%20Report.pdf (accessed 27 March 2018).

⁵ Department of Science and Technology – National Research Foundation Centre of Excellence in Food Security (2018) Home. Available at: http://www.foodsecurity.ac.za (accessed 27 March 2018).

⁶ Cimera (2015) Home: all about Cimera. Available at: http://www.cimera.co.za/ (accessed 27 March 2018).

⁷ C*change (2018) Welcome to C*change. Available at: http://www.cchange.ac.za (accessed 27 March 2018).

⁸ Forestry and Agricultural Biotechnology Institute (2018) The DST-NRF Centre of Excellence in tree health biotechnology. Available at: https://www.fabinet.up.ac.za/index.php/research-groups/dst-nrf-centre-of-excellence-in-tree-health-biotechnology (accessed 27 March 2018).

⁹ South African Medical Research Council (2018) Home: profiling science. Available at: http://www.mrc.ac.za/ (accessed 27 March 2018).

¹⁰ Council for Scientific and Industrial Research (2018) Home. Available at: https://www.csir.co.za (accessed 27 March 2018).

¹¹ Human Sciences Research Council (2018) Homepage. Available at: http://www.hsrc.ac.za/en (accessed 27 March 2018).

¹² Council for Scientific and Industrial Research (2018) Energy. Available at: https://www.csir.co.za/energy (accessed 27 March 2018).

¹³ Council for Scientific and Industrial Research (2018) Built environment. Available at: https://www.csir.co.za/built-environment-0 (accessed 27 March 2018).

¹⁴ Council for Scientific and Industrial Research (2018) Health. Available at: https://www.csir.co.za/health (accessed 27 March 2018).

¹⁵ Human Sciences Research Council (2018) Democracy, Governance and Service Delivery: who we are.
Available at: http://www.hsrc.ac.za/en/departments/democracy-governance-and-service-delivery (accessed 27 March 2018).

¹⁶ Human Sciences Research Council (2018) Human and social development: fresh insights that cut through inequalities.
Available at: http://www.hsrc.ac.za/en/departments/human-and-social-development (accessed 27 March 2018).

¹⁷ Agricultural Research Council (2014) Home. Available at: http://www.arc.agric.za (accessed 27 March 2018).

¹⁸ Department of Science and Technology and National Research Foundation (2015) The National Research Foundation of South Africa - fostering science and research collaboration in Africa. Available at: http://www.nrf.ac.za/sites/default/files/documents/NRF%20Africa%20Engagements_2015.pdf (accessed 27 March 2018).

¹⁹ Department of Science and Technology and National Research Foundation (2015) The National Research Foundation of South Africa - fostering science and research collaboration in Africa.

Available at: http://www.nrf.ac.za/sites/default/files/documents/NRF%20Africa%20Engagements_2015.pdf (accessed 27 March 2018).

²⁰ Oliver K, Lorenc T and Innvær S (2014) New directions in evidence-based policy research: a critical analysis of the literature. *Health Research Policy and Systems* 12(34): 1-11.

²¹ Head BW (2008) Three lenses of evidence-based policy. *Australian Journal of Public Administration* 67(1): 1–11.

²² Hunsmann M (2012) Limits to evidence-based health policymaking: policy hurdles to structural HIV prevention in Tanzania. *Social Science & Medicine* 74(10): 1477-1485.

²³ Head BW (2008) Three lenses of evidence-based policy. *Australian Journal of Public Administration* 67(1): 1–11.

²⁴ Juntti M, Russel D and Turnpenny J (2009) Evidence, politics and power in public policy for the environment. *Environmental Science and Policy* 12(3):207-215.

²⁵ Innvaer S, Vist G, Trommald M and Oxman A (2002) Health policy-makers' perceptions of their use of evidence: a systematic review. *Journal of Health Services Research & Policy* 7(4): 239–244.

²⁶ Oliver K, Lorenc T and Innvær S (2014) New directions in evidence-based policy research: a critical analysis of the literature. *Health Research Policy and Systems* 12(34): 1-11.

²⁷ Orton L, Lloyd-Williams F, Taylor-Robinson D, O'Flaherty M and Capewell S (2011) The use of research evidence in public health decision making processes: systematic review. *PLoS ONE* 6(7): e21704.

²⁸ Lorenc T, Tyner EF, Petticrew M, Duffy S, Martineau FP, Phillips G and Lock K (2014) Cultures of evidence across policy sectors: systematic review of qualitative evidence. *European Journal of Public Health* 24(6): 1041–1047.

²⁹ Oliver K, Lorenc T and Innvær S (2014) New directions in evidence-based policy research: a critical analysis of the literature. *Health Research Policy and Systems* 12(34): 1-11.

³⁰ Lavis JN, Robertson D, Woodside JM, McLeod CB and Abelson J (2003) How can research organizations more effectively transfer research knowledge to decision makers? *The Millbank Quarterly* 81(2): 221-248.

³¹ Head BW (2008) Three lenses of evidence-based policy. *Australian Journal of Public Administration* 67(1): 1–11.

³² Howlett M (2009) Policy analytical capacity and evidence-based policy-making: lessons from Canada. *Canadian Public Administration* 52(2): 153-175.

³³ Hunsmann M (2012) Limits to evidence-based health policymaking: policy hurdles to structural HIV prevention in Tanzania. *Social Science & Medicine* 74(10): 1477-1485.

³⁴ Innvaer S, Vist G, Trommald M and Oxman A (2002) Health policy-makers' perceptions of their use of evidence: a systematic review. *Journal of Health Services Research & Policy* 7(4): 239–244.

South Africa's progress on selected SDG 15, SDG 16 and SDG 17 indicators

SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
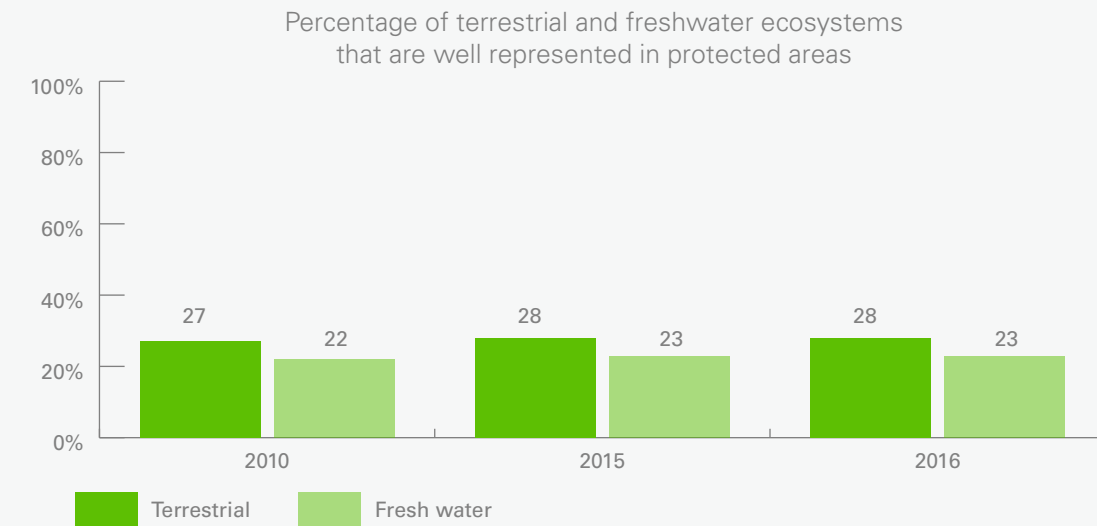
Percentage of terrestrial and freshwater ecosystems that are well represented in protected areas

Fig.24 — Source: South African Protected Area Database, Department of Environmental Affairs

Percentage of mountain ecosystem types that are well represented in protected areas
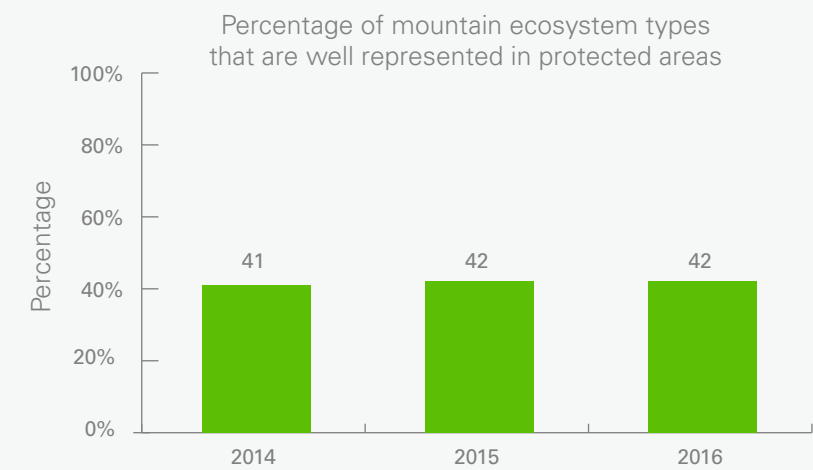

Fig.25 — Source: South African Protected Area Database, Department of Environmental Affairs

SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

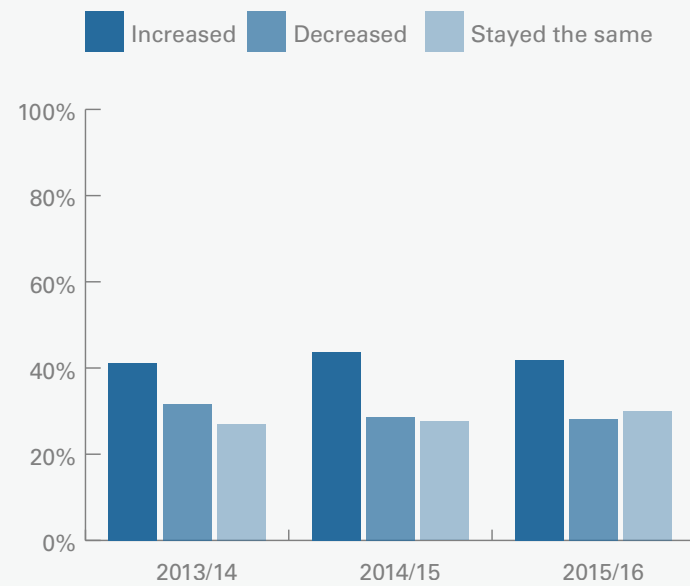## Distribution of household heads according to perceptions on crime

■ Increased ■ Decreased ■ Stayed the same

Fig.26 — Source: Victims of Crime Survey, Statistics South Africa
Base Year = 2015/16

Number of household heads per 100 000 who feel safe walking alone in the dark

■ Number per 100 000

Fig.27 — Source: Victims of Crime Survey, Statistics South Africa
Base Year = 2015/16

Percentage of school attending children who experienced any physical punishment and/or psychological aggression at school in the past 3 months
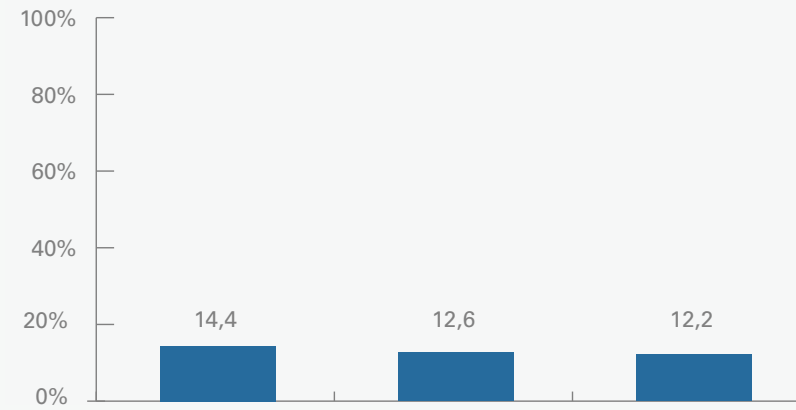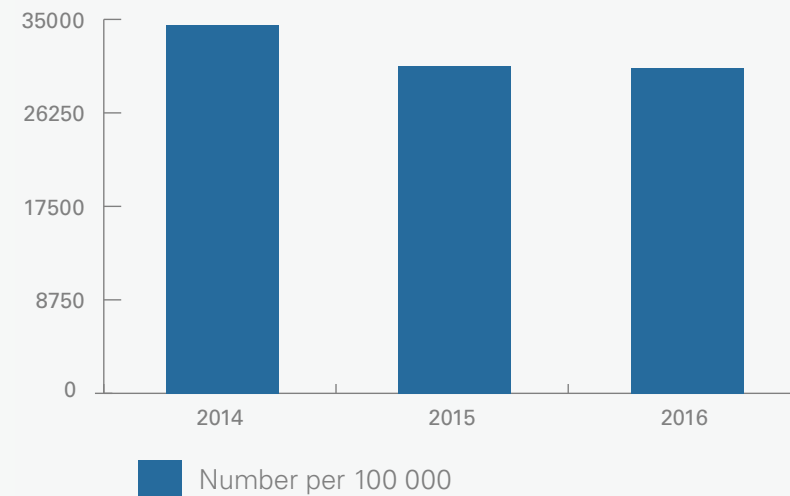

Fig.28 — Source: General Household Survey, Statistics South Africa
Base Year 2015

Province	2014 / 2015	2015 / 2016
Western Cape	122	115
Eastern Cape	117	108
Northern Cape	60	56
Free State	69	67
Kwa Zulu-Natal	67	66
North West	71	66
Gauteng	103	92
Mpumalanga	101	108
Limpopo	81	77
South Africa	80	76

Incidence of rape
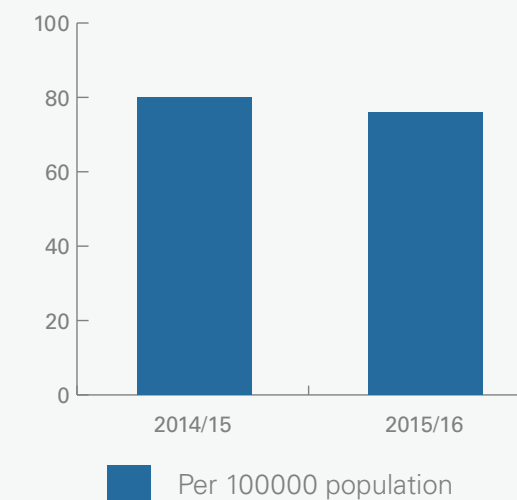

■ Per 100000 population

Fig.29 — Source: Crime Statistics, SAPS
Base Year = 2015/16

SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

Proportion of domestic budget funded by domestic taxes

Fiscal year	Domestic budget (R'million)	Domestic taxes (R'million)	Total domestic tax/domestic budget
2013 /14	1 048 794	900 015	0,86
2014 /15	1 133 304	986 295	0,87
2015 /16	1 245 969	1 069 983	0,83

Fig.30— Source:
Budget Review
National Treasury
Base Year 2015/16

Percentage of households using the internet by province

Province	2013	2014	2015	2016
Western Cape	54,4	62,1	63,3	68,5
Eastern Cape	30,2	37,4	46,0	49,2
Northern Cape	37,3	47,7	49,0	54,9
Free State	39,7	48,7	50,8	56,1
Kwa Zulu-Natal	32,3	40,5	42,3	51,2
North West	35,3	42,4	47,5	53,7
Gauteng	54,0	59,9	65,7	72,2
Mpumalanga	37,8	48,1	55,7	58,1
Limpopo	21,9	32,6	39,3	42,4
South Africa	40,9	48,7	53,5	59,3

Fig.31 — Source:
General Household
Survey, Statistics
South Africa

Contributors

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Lidia Afonso-Gallegos holds a Masters in Economics and a Masters in Microfinance and Development. She worked as a business consultant and investment advisor for 8 years, before transitioning to the International Development sector in 2009. Lidia has worked in 8 countries in 4 different continents and spent a significant time of her professional life focusing on the role of the private sector in sustainable development. She joined the Delegation of the European Union to South Africa in 2015.

Nardos Bekele-Thomas

Nardos Bekele-Thomas is currently the Resident Coordinator of the United Nations (UN) and Resident Representative of the United Nations Development Programme (UNDP) in South Africa. Prior to this, she served (2016-2017) as the Senior Director of the Office of the Secretary-General, in charge of the overall management of the Office of the Secretary-General, the Office of the Chef de Cabinet and that of the Deputy Secretary-General. Previously, she was the UN Resident Coordinator and UNDP Resident Representative in the Republic of Kenya. She also served as UN Resident Coordinator and UNDP Resident Representative in the Republic of Benin from November 2008 to September 2013. Over the last three decades, Ms. Bekele-Thomas has also lived and served in various capacities in Ethiopia (1974-1982), New York, USA (1983-1987 and 1998-2004), India (1987-88), Bhutan (1988-1989), Comoros Islands (1989-1990), Republic of Benin (l990-1993) and Uganda (1994-1998), promoting human development anchored on the principles of economic, social and political rights for all. Before her assignment to Kenya, Ms. Bekele-Thomas served in New York as Country Programme Adviser for East and Central Africa in the Regional Bureau for Africa of UNDP (2001-2004).

Harsha Dayal

Harsha Dayal currently works as the director of research in the Department of Planning Monitoring and Evaluation within the Presidency of South Africa. Research experience in poverty, public health, gender and disability studies gained during her employment at the Human Sciences Research Council from 2007 to 2014 has provided her with the necessary experience and skills in bridging the research community and policy makers towards critical national priorities grounded in the Social Sciences. She has a Master's degree in Public Health and is a qualified Occupational Therapist serving the public health sector from 1993 to 2007. She is championing evidence synthesis as a methodology for public sector officials to become skilled at, in order to effectively use research and other evidence, influence policy development to achieve national goals and respond timeously to decision makers using quality evidence. She strives towards bringing together the two worlds of research and policy in transforming society and pursuing developmental objectives.

Derick de Jongh

Derick de Jongh is the Founding Director of The Albert Luthuli Centre for Responsible Leadership (ALCRL) at the University of Pretoria. He is a Visiting Professor at institutions such as the Rowe School of Business, Dalhousie University (Canada) and at the Asia Pacific Centre for Sustainable Enterprise, Griffith University (Australia) where he serves as Adjunct Professor. Prof de Jongh serves on the editorial boards of numerous journals, including the International Journal of Corporate Citizenship, Sustainability Accounting Management and Policy Journal, The Journal of Global Responsibility and the Journal for Innovation and Sustainable Development. Under his leadership a PhD programme in Leadership, a Master's degree in Responsible Leadership, a Master's degree in Development Practice and Leadership and a Post Graduate Diploma in Integrated Reporting was developed. Prof de Jongh regularly participates in local radio talk shows on issues related to leadership and complex social problems.

Willem Fourie

Willem Fourie is Associate Professor at the University of Pretoria's Albert Luthuli Centre for Responsible Leadership and co-ordinator of the South African SDG Hub. Since 2012 he has contributed to development effectiveness initiatives co-ordinated by the African Union's NEPAD Agency, often within the ambit of the Global Partnership for Effective Development Cooperation. He is an Alexander von Humboldt fellow and has published more than 20 peer-reviewed articles, book chapters and books

Nonhlanhla Mkhize

Nonhlanhla Mkhize is a Chief Director: Innovation for Inclusive Development at the Department of Science and Technology. Ms Mkhize has held various positions in the South African government. These positions include various technical, project and programme management roles in research and development, biodiversity management and inclusive development. She has also represented South Africa in various forums and technical committees dedicated on using science, technology and innovation to advance inclusive development. She has received various awards for her contribution in the delivery of services and continues to influence the discourse on leveraging innovation to achieve the inclusive development agenda. Ms Mkhize holds a B. Sc degree in Microbiology and Biochemistry and a B.Sc Hons in Microbiology. She is currently pursuing her Doctoral studies at the University of Cape Town's Graduate School of Business.

Jozet Muller

Dr Jozet Müller is a development practitioner and seasoned project manager with extensive experience in development cooperation. She has worked in the development sector for more than 15 years, with a focus on governance, human rights, democracy, parliamentary strengthening, civil society, philanthropy and higher education. She has worked in civil society, academia, international organisations and diplomatic missions, including the European Union Delegation to South Africa and the Embassy of the United States of America in South Africa. Jozet holds a doctorate in Political Studies (D.Litt et Phil) from the University of Johannesburg. She re-joined the European Union Delegation to South Africa in 2016 as programme manager responsible for Higher Education and Governance programmes. Prior to this, she worked at the Southern Africa Trust as Deputy Head of Programmes, tasked with strategy development and philanthropy programs and initiatives, and was instrumental in the establishment of the first Chair in African Philanthropy at Wits University. Her interests are human rights, good governance, civil society and education.

Arno Schaefer

Dr Arno Schaefer is the Head of Cooperation at the Delegation of the European Union to the Republic of South Africa. He studied Economics and Agricultural Economics at the University of Kiel in Germany and the University of Minnesota in the USA and holds a Ph.D. in Agricultural Economics. He started his professional career as Lecturer and Assistant Professor at the University of Kiel and the Vesalius College in Brussels. A Schaefer is a civil servant of the European Commission since 1986. His various assignments include foreign relations, development cooperation, transport and agriculture. A. Schaefer is in South Africa since September 2014. Other overseas postings include India, Swaziland and Mauritius.

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