A key characteristic of a democracy is the continuing responsiveness of the government to the preferences of its citizens, considered as political equals. (Dahl 1971: 1)

A core idea of democracy is that the rulers in power are responsive to the state’s citizenry, whereby ‘responsive’ implies that they take the will of the governed into account (Dahl 1971). Thus, a central dimension of quality in democratic governance is the degree to which decision-making is guided by the needs and demands of the voters. Ideally, government policies reflect the majority preference of the people. This is, of course, a normative stance. A perfect congruence between what the citizens want and what the government does is utopian in any real world democracy, where unpopular decisions – for example, an increase in taxation – also need to be made. Yet, the legitimacy of democratic governments is based on the premise that they consider the demands of their constituencies “at least in broad outlines over the long run” (Gilens 2005: 779).

In aid-receiving democracies, the question whose interests are taken up in policy processes is often difficult to answer. Given the dependencies pervading aid and the omnipresence of donor-funded experts in the power centres of recipient countries, one can assume that a plethora of decisions are imposed from outside, reflecting the preferences of donors rather than those of domestic publics, that constitute the electorate. We want to explore the extent to which policy-making in South Africa and Tanzania is shaped by external experts acting on behalf of the aid community, focusing on education, health and environment as fields of investigation. These areas are particularly relevant for
three reasons: first, they are high on the development agendas of both states; secondly, they have been target areas of foreign support; and thirdly, expertise and ‘evidence’ are deemed crucial for legitimating policy decisions in these fields. Aside from the policy content, which is different in each sector, we pay particular attention to the process of policy development, the actors involved therein as individuals and members of groups, and the context which provides the ‘setting’ for their interaction (Walt & Gilson 1994). Adopting a political economy perspective, this approach starts from a number of assumptions, namely that (a) structural conditions decisively impact on the outcomes of policy negotiation; (b) contemporary processes and relations are affected by past experiences which requires a historical perspective; and (c) conflicts of interest between local and foreign actors may well be grounded on legitimate political differences (Whitfield 2009).

To what extent aid recipients in South Africa and Tanzania have been able to defend their views and set their own agenda against outside advice, and what accounts for their strengths or weaknesses in doing so, are the guiding questions of the six case studies that follow.

The extent to which developing democracies are able to defend their decision-making autonomy in the political realm primarily depends on three structural conditions: financial strength, administrative capacity, and the local knowledge base they can draw on. We explicate the relevance of these factors for aid-related advisory processes and look at South Africa’s and Tanzania’s status with regard to corresponding indicators in the fields of health, environment and education.

**Financial strength**

*Let me tell the truth: If our relationship is also influenced by donating, do you think you have much power if you are a recipient?* (Interview 60)

This statement by a permanent secretary in Tanzania hints at a pervasive experience of aid recipients, namely that due to their dependency on donor resources, they are invariably the inferior party in negotiations. We assume that the degree of asymmetry in donor–recipient relations notably depends on the financial strength of the soliciting country. Hence the first hypothesis: the higher the financial dependency, the weaker is the recipient’s position in defending the local agenda against external pressure.

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129 See also Whitfield & Fraser 2009.
Governments in need of donor money are inevitably forced to accept that they have to enter some sort of negotiation with potential financiers and may need to compromise on the terms and conditions of assistance (Nissanke 2010); “…conditionality is the price the recipient pays in order to get access to transfers in case of nonaligned preferences” (Martens 2008: 289). Previous studies indicate that one factor determining the bargaining discretion of the beneficiary is the degree of dependency on aid as an essential source of finance (Gould 2005a: 143). When aid is constitutive of the overall performance of the domestic economy and a government’s capacity to act, recipients are likely to accept external interference in policy-making for the sake of keeping their economy and state apparatus running. In extreme cases, the dependency on donor funding erodes governments’ agenda-setting function since “priorities turn to whatever brings in the most money” (Polidano 2000: 812).

Among the various definitions and variables of aid dependency the indicator commonly used at present is the share of aid to the recipient country’s gross national income (GNI). Figure 7 displays the ratio of official development assistance and GNI in Tanzania, South Africa and sub-Saharan Africa from 1993 (the first year in which data for South Africa are available) until 2011. Most notably, it shows that the percentage of aid to South Africa’s GNI ranging from the lowest value of 0.21% in 1993 to the highest of 0.47% in 2002 remained basically insignificant. Tanzania, in contrast, has very high ratio levels, both compared to South Africa and to sub-Saharan Africa as a region. Although the proportion of ODA to the country’s GNI declined by more than half from 23.07% in 1993 to 10.32% in 2011, it is still significant, implying the high impact of aid on the Tanzanian economy.

Relating aid volumes to the gross national income (or the gross national product previously used as denominator) points to the significance of external finances to recipient economies and invites assumptions about the consequential influence of external financiers in spending decisions (Bräutigam 1992). For our purposes, however, such measures have two flaws. First, they describe aid dependency of recipient economies rather than governments; and second, they are not useful for a sectoral analysis.

An indicator which may be disaggregated by sectors is the ratio of aid as a percentage of government expenditure. The underlying argument: when

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130 Glennie & Prizzi (2012); see also Lesink & White (1999); Bräutigam (2000); Knack (2001).

131 In an early article on the interdependencies of governance, economy and foreign aid, Bräutigam (1992: 11) stated that “when aid transfers reach ten percent or more of total GNP (as they did for at least 24 countries in 1989) and exceed total current revenue from other sources, those with the loudest single voice on revenue and expenditure issues are international lending agencies”.

132 This equally applies for other commonly used indicators such as ‘Net ODA received per capita’ or ‘Net ODA received as % of imports of goods, services and primary income’ which cannot be disaggregated by different sectors.
donors fund a substantial share of sector budgets, they are likely to have a say in defining the priorities for which their money is spent. If a line ministry is highly dependent on external financing for implementing a national programme, its leaders can hardly reject support, even if it comes with conditions. These conditions may not even be explicitly written down in agreements, but conveyed in policy forums where donor experts and government officials interact. The latitude of decision-makers to take decisions against advice is severely restricted when their capacity to deliver basic services depends on donor money.

While the share of external contributions in government expenditures constitutes a suitable indicator for (sectoral) aid dependency, it has some crucial constraints pertaining to the accessibility and accuracy of data. As several scholars have pointed out, figures for this measure are scarce and not necessarily consistent, which makes it difficult to carry out time-series analyses and cross-country comparisons (Knack 2001; Glennie & Prizzon 2012). In the WDI database, the indicator “Net ODA received (% of central government expense)” lacks information for 15 out of 48 states in sub-Saharan Africa, including Tanzania; for the remaining ones, data are at best erratic. In addition to the limited availability of data on recipient government expenses, donor statistics pose a major problem. Aid agencies apply different definitions and standards in reporting which are not always clearly spelled out; for instance, many do not disclose which amount of a certain programme budget is actually transferred to the recipient or used for advisors and administration.¹³³ In many

¹³³ In interviews and during a feedback workshop held in Stellenbosch in 2013, government officials from both South Africa and Tanzania strongly complained about donors not disclosing disaggregated data on financial disbursements and technical assistance, pointing particularly to the
cases, one finds appalling discrepancies between aid commitments and actual disbursements (Bulíř & Hamann 2008; Celasun & Walliser 2008). Moreover, donor figures are often different from those reported by recipient governments (Wood et al. 2011). This is exacerbated by huge amounts of off-budget funding channelled outside government systems. Hence, information on aid flows varies depending on the sources selected.

In light of such constraints on availability of reliable data, any numbers related to aid have to be taken with caution. The data we present in Table 5 on donor funding as a share of total expenditures in different policy fields, thus need to be considered as indicative rather than accurate. Extracted from annual reports and expenditure reviews of government ministries and departments, they are based on different systems which are not methodologically congruent since the way external funding is accounted in South Africa and Tanzania varies. A common feature in financial statements of ministries and departments, however, is the indication of actual expenditures and the amount of aid thereof. Juxtaposing the calculated shares based on these figures may help to get an impression of the financial impact of donors in different policy areas:

Table 5: Aid as share of government expenditures in 2010/2011 (%)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Education</th>
<th>Health</th>
<th>HIV/AIDS</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>1.0</td>
<td>1.3</td>
<td>0.8</td>
<td>16.4</td>
<td>1.1</td>
</tr>
<tr>
<td>Tanzania</td>
<td>28.2</td>
<td>8.5</td>
<td>38.4</td>
<td>97.5</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Source: Fölscher et al. (2010: 1); Policy Forum (2010b: 1); Department of Basic Education (2011: 21); Department of Health (2011a: 150); Education Sector Development Committee (2011: 115); Department of Environmental Affairs (2012a: 71); Ministry of Health and Social Welfare (2012: 14); Republic of South Africa (2012: 67); TACAIDS (2012: 1). Our own percentage calculations.

Table 5 provides a snapshot of the impact of donor contributions on line ministries’ and departments’ spending for the fiscal year 2010/2011. A salient contrast is the generally low level of external funding amounting to around 1% (except for HIV/AIDS) in South Africa, while in Tanzania aid is a substantial part of both total and sector expenditures. The extreme is represented in the field of HIV/AIDS where donor funds made up 97.5%. Yet, to draw the conclusion that South Africa can do without aid would be too simple, since plain numbers never paint a whole picture. We therefore contextualise the non-transparent practice of USAID which poses a severe problem for government planning and budgeting.

134 In a report on the second phase of implementing the Paris Declaration, the authors comment on the ‘statistical obstacles’ observed as follows: “It is not clear to what extent these reported problems result from poor or late reporting (at the international or national levels), to unsynchronised cycles and/or to actual discrepancies in commitments and/or disbursements. In any case they perpetuate uncertainty and do not encourage trust” (Wood et al. 2011: 13).
figures presented above with additional material in order to further delineate dimensions of aid dependency in the different areas.

**South Africa’s financial strength by sectors**

A case in point that illustrates the limited informative value of numbers refers to the impact of donor funding in the South African environment sector. At the national level, the Department of Environmental Affairs (DEA) is the most important government organisation in charge. With 1.1%, aid made up only a small share of DEA’s expenditures in 2010/2011, implying a very limited role of external funding.\(^{135}\) Although the significance of aid for DEA has declined considerably over the last decade, it remains an essential source of income for other public entities and nature conservation agencies that are severely underfunded. The South African National Biodiversity Institute (SANBI), a national statutory body responsible for monitoring the state of biodiversity and providing research and policy advice on biodiversity matters, is heavily dependent on external funding in key areas of its mandate (Parliamentary Monitoring Group 2012). In 2011 and 2012, around half of the resources required for generating science-based evidence to inform decision-making related to biodiversity management and climate change were obtained from donors. In its strategic plan for 2013–2018, SANBI warns that “certain deliverables are at risk if the nature or extent of the external funding changes during the five-year planning period” (SANBI 2013: 20). Provincial conservation authorities such as CapeNature in the Western Cape face similar challenges. In recent years, grants from domestic and international donors have amounted to half of the organisation’s total budget (Hamman 2009: 1), making the implementation of programmes and services contingent on external financiers. Given such resource constraints of key agents in the field of environment, the sector is to some extent dependent on donor money, although it appears marginal from a national perspective.

In education, aid is an issue of historical importance, but rather negligible in financial terms. During the apartheid era, various countries from Europe, the US and from other world regions provided overseas scholarships and extensive funding for educational initiatives in order to support the oppressed non-white population, bypassing the isolated government (King 1999).\(^{136}\) When in 1994 the new democratic Government of National Unity came into

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135 This is down from 20% in 1999/2000 and around 4.5% in 2004/2005 (Department of Environmental Affairs and Tourism 2006: 72). In 1999/2000, the department was still named “Department of Environmental Affairs and Tourism” (DEAT).

136 Details on the historical background of donor support to education in South Africa will be outlined in the respective case study (see Chapter 7).
power, the international community was ready to shift its assistance from civil society to the Department of Education and its envisaged reform activities. In the early years of the new state, “requests for educational collaboration were arriving virtually on a daily basis from prospective partners as large as the Russian Federation and as small as Croatia” (King 1999: 260). While an enormous number of bi- and multilateral agencies contributed to the subsequent transformation process, the financial volume of aid in relation to government spending remained marginal, making it “almost impossible to identify individual contributions of donors” (Ngeleza et al. 2000: 29).

This is still the case today. As in Tanzania, the education sector in South Africa receives the largest part of the government’s budget. In recent years, its share gradually increased from 18.2% in 2010/2011 (ZAR 165.1 billion) to 20.2% in 2013/2014 (ZAR 232.5 billion). The resources are primarily allocated to the Department of Basic Education and the Department of Higher Education and Training responsible at the national level, and to the nine provincial Education Departments.\(^\text{137}\) The figure on aid assistance as a percentage of expenditures indicated in Table 5 pertains to the Department of Basic Education in fiscal year 2010/11; with 1.3%, the share of foreign funding was negligible. In subsequent years, it remained at a similarly low level, increasing only slightly to 2% in 2012/13.\(^\text{138}\) External contribution in expenditures of the newly established Department of Higher Education and Training consistently made up less than 1% in its initial years of operation.\(^\text{139}\)

Given such small numbers, it is evident that the role of foreign money in the South African education system is marginal. Yet, various government officials interviewed emphasised the value of aid as a means for co-financing pilot projects and ‘niche areas’ such as inclusive education, for which the regular budget provides only limited resources. In 2010/11, donor funds were used for the development of the Human Resources Management Information System in education and for teacher training in special schools, amongst others (Department of Basic Education 2011: 128). For such initiatives, ODA provides an ‘added-value’ in education. Largely, however, the sector can be assessed as financially independent from donor assistance.

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\(^{137}\) In 2009, the former Department of Education was split into two ministries. While the Department of Basic Education is now in charge of early childhood development, and primary and secondary education, the Department of Higher Education and Training covers tertiary education up to the doctorate level, adult basic education, and technical and vocational training (skills development) which was previously managed by the Department of Labour. Details on educational governance structures are provided in the respective case study (see Chapter 7).

\(^{138}\) The percentages are calculated from data on aid assistance in actual expenditures as indicated in the financial statements of the department’s annual reports: Department of Basic Education (2011: 144), (2012: 128), (2013: 242).

\(^{139}\) This is drawn from financial statements in DHET’s annual reports: Department of Higher Education and Training (2011: 146), (2012a: 160), (2013a: 209).
In health, we find a similar situation if looking at the sector in general. Although gradually increasing, external resources for health make up a very small percentage of total health expenditure in South Africa, as shown in Table 6:

Table 6: External resources as share of total health expenditure in South Africa

<table>
<thead>
<tr>
<th>Year</th>
<th>96</th>
<th>97</th>
<th>98</th>
<th>99</th>
<th>00</th>
<th>01</th>
<th>02</th>
<th>03</th>
<th>04</th>
<th>05</th>
<th>06</th>
<th>07</th>
<th>08</th>
<th>09</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>0.1</td>
<td>0.1</td>
<td>0.2</td>
<td>0.1</td>
<td>0.3</td>
<td>0.2</td>
<td>0.4</td>
<td>0.4</td>
<td>0.5</td>
<td>0.5</td>
<td>0.7</td>
<td>0.8</td>
<td>1.2</td>
<td>1.9</td>
<td>2.2</td>
<td>2.1</td>
</tr>
</tbody>
</table>


Budgetary figures of the Department of Health confirm the financial strength of the South African government. Aid assistance accounted for only 0.8% (of the department’s actual expenditures in fiscal year 2010/2011, see Table 5. Department of Health 2011a: 150), equivalent to previous years. Such numbers suggest that foreign money is insignificant for public health financing. While this holds true in principle, there is one important exception: in HIV/Aids, the focus area of donor engagement, external funding plays a critical role.

Although the South African government “is the primary investor in its own national and provincial response to the HIV/AIDS and TB epidemic” (Republic of South Africa 2012: 92), donors substantially contribute to financing interventions. In 2009/2010, external sources amounted to ZAR 2 126 million (equivalent to USD 265 million), which made up 16.4% of all HIV/Aids and TB spending in South Africa (Republic of South Africa 2012: 67). Compared to other African countries where over 80% of HIV programmes are funded from outside (Venter 2013), this figure may still seem moderate. Yet, the significance of assistance recently became manifest when the two largest external financiers, that is, the United States through PEPFAR and the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), cut their contributions. Since 2004, the PEPFAR programme has channelled nearly USD 4 billion to South Africa (Kavanagh 2014). The bulk of resources were allocated to NGOs offering direct services for patients in need of antiretroviral drugs. Now that the US has ceased funding in the course of the PEPFAR ‘transition’, many specialised HIV treatment centres have been forced to close (Katz et al. 2013); the South African government has struggled to absorb patients and staff into

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140 The figures presented in Table 6 relate to all channels of health spending (i.e. government, private sector and NGOs). Data were extracted on 20 February 2014 (WHO 2014).

141 Over the period 2008–2010, ZAR 2 500 million were channelled through the PEPFAR programme and ZAR 680 million through the Global Fund, which together amounted to 58.3% of external aid for tackling HIV/Aids (Republic of South Africa 2012: 92/95).
an overstretched public health system (Kavanagh 2014). Thus, aid funding has some relevance in South Africa’s HIV/AIDS response, despite its limited volume in relation to domestic resources.

**Tanzania’s financial strength by sectors**

Assessing Tanzania’s financial strength in the environment sector is challenging since it is handled as a cross-cutting issue for which various ministries share responsibility. In contrast to HIV/AIDS (which is also termed cross-cutting), environment is not captured in a separate ‘code’ in budget books. Hence, as other authors have pointed out, it is impossible to give accurate figures or percentages of government and donor spending in this policy area. In order to nonetheless delineate the impact of external funding on environment, it is instructive to look at the budgetary situation of major players involved. The Division of Environment in the Vice-President’s Office (VPO-DoE) and the Forestry and Beekeeping Division in the Ministry of Natural Resources and Tourism (MNRT) are primarily concerned with the matter. Table 7 displays actual spending of these units as indicated in the government’s budget books, that is, disaggregated into recurrent and development expenditures. While the former cover operational expenses (e.g. for salaries and wages, purchases of goods and services), the latter are used for development projects and investment activities. Two issues stand out: first, development expenditures are almost entirely financed from foreign sources (except for VOP-DoE in 2009/2010); and second, external contributions are notably volatile in terms of their financial volume.

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Development expenditure</th>
<th>Recurrent expenditure</th>
<th>Total expenditure</th>
<th>Foreign as % of dev. total</th>
<th>Foreign as % of total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>local foreign</td>
<td>dev. total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009/10</td>
<td>957 0 957</td>
<td>6 316 7 274</td>
<td>0.0 0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010/11</td>
<td>0 481 481</td>
<td>3 682 4 163</td>
<td>100.0 11.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011/12</td>
<td>168 3 713 3 881</td>
<td>4 548 8 429</td>
<td>95.7 44.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

142 In 2012, the US announced it would gradually reduce PEPFAR funding to South Africa from USD 484 million in 2012 to USD 250 million in 2017 (Kavanagh 2014: 9).

143 See Luttrell & Pantaleo (2008); Kulindwa et al. (2010). Trying to compile an overview on the environment budget in Tanzania, Kulindwa et al. (2010) itemised allocations to environment-related programmes carried out by 13 different ministries; the contribution of donors to these programmes unfortunately cannot be traced.

144 Details on organisational structures and responsibilities related to environmental governance in Tanzania are provided in the respective case study (see Chapter 7).
### Ministry of Natural Resources and Tourism, Forestry and Beekeeping Division

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Development expenditure</th>
<th>Recurrent expenditure</th>
<th>Total expenditure</th>
<th>Foreign as % of dev. total</th>
<th>Foreign as % of total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>local</td>
<td>foreign</td>
<td>dev. total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009/10</td>
<td>19</td>
<td>6 740</td>
<td>6 759</td>
<td>13 068</td>
<td>99.7</td>
</tr>
<tr>
<td>2010/11</td>
<td>0</td>
<td>3 287</td>
<td>3 287</td>
<td>13 354</td>
<td>100.0</td>
</tr>
<tr>
<td>2011/12</td>
<td>0</td>
<td>68</td>
<td>68</td>
<td>14 491</td>
<td>100.0</td>
</tr>
</tbody>
</table>


Again, it needs to be stressed that the figures do not take into account the large sums of foreign funding provided outside the government system. Yet, they reflect the consistently high aid dependency of divisions concerned with environmental issues. The former director of environment in the Vice-President’s Office confirmed that during his term in office more than 90% of funding for programmes was provided by donors. This made implementation reliant on continued support. At the time of our interviews, the Ministry of Natural Resources and Tourism experienced the consequence of this dependency when major donors withdrew aid due to recurrent corruption allegations, causing a serious funding crisis.

Without external resources, not only development programmes grind to a halt. In some cases, public entities are under-funded to an extent which imperils their core operations. The National Environmental Management Council (NEMC), established as a technical advisory, coordinating and regulatory agency in charge of environmental protection, struggles to meet its recurrent expenditures without donor money. According to a newspaper article citing the director-general, NEMC received only TSh 1 billion out of TSh 7 billion requested from the government in fiscal year 2011/2012 (Rugonzibwa 2012). An environmental officer working for the council delineated the situation as follows:

> Even if you had the approval maybe that the government is giving one million, at the end of the day you are getting 200 000 thousand out of the million. So you find within the financial year, you have the promise, you have an approved budget, but the fund is not coming. (…) It is unpredictable when you are going to get the funds to implement the activities. That’s why there are a lot of problems. (Interview 59)

The fact that environment comes out at the short end in resource allocation is not surprising in a country with “tremendous needs and huge budget shortfalls” (Interview 46), as a World Bank environmentalist put it (see also
CHAPTER 6 Retaining Autonomy of Agenda-Setting in Dealing with Advice: Structural Conditions

Mwalyosi & Sosovele 2001). External funding has become a substantial source of income for government units concerned with environmental issues. Hence, the dependency on donor support in the field of environment is significant.

In contrast to environment, education is a priority sector in Tanzania. As in South Africa, it has repeatedly received the largest portion of the government’s budget in recent years, with shares fluctuating between 17% and 23% during 2008–2013.\(^{145}\) As in other African countries, aid accounts for only a minor part of education spending (Samoff 2009). For the MoEVT, foreign contributions made up 8.5% of total expenditures in 2010/2011 (see Table 5) which implies a rather limited relevance of donor funding. However, the leveraging impact of external assistance needs to be considered. Education is a sector with high operational costs. Given that the bulk of resources are depleted by recurrent expenditures such as salaries and allowances, “there is little money for teacher education, textbooks, building construction and maintenance, even pencils, paper, and chalk” (Samoff 2009: 11). This is where donors come into play. While their contribution appears small in relation to the overall education budget, it makes up a significant portion of development expenditures. In 2010/11, foreign funds accounted for 60% of the education ministry’s development budget, an increase compared to the previous two years where the share was between 45% and 50% (Policy Forum 2010a). Development programmes are thus highly dependent on donor support and subject to external priorities. At the time of our interviews, the Primary Education Development Programme suffered from decreased funding as a result of diminishing donor interest; the Higher Education Development Programme was shelved due to a lack of financial assistance. The fact that donors regularly fall short of meeting their pledges causes serious setbacks for the implementation of programmes.\(^{146}\) The significance of external funding in the development budget makes donors more relevant than they may seem at first glance. In interviews in this study, Tanzanian policy-makers concerned with educational issues made clear that for them aid is a central source of revenue besides taxes. Assessing the financial impact of donors in the sector, one needs to consider that “a relatively small amount of money is a large portion of discretionary resources and purchases a great deal of influence” (Samoff 2009: 11).

\(^{145}\) See Policy Forum & HakiElimu (2011); Ministry of Finance (2012); United Republic of Tanzania (2012b); PER Macro Group (2013). Data on education spending as a share of total government budget provided by different sources vary. The discrepancy in figures, however, is marginal, amounting to 1–2%. In 2010/11, a sum of TSh 2 045 billion was destined for education, of which one third was allocated to the Ministry of Education and Vocational Training (MoEVT) and the remainder to the Ministry for Social Development, Gender and Children (MSDGC) and the Local Government Authorities (LGAs).

\(^{146}\) See Policy Forum (2010a). According to HakiElimu, a leading civil society organisation focusing on education in Tanzania, donors provided only 43% of their commitments in 2008/2009 (TSh 27.6 from 64 billion) and 48% in 2009/2010 (TSh 30.3 from 63.4 billion) (HakiElimu 2011: 4).
Looking at the health sector, the financial dependency is obvious at first glance. Table 8 displays external resources for health as a percentage of total health expenditure in Tanzania. While in the mid-1990s, donor share was still less than 10%, it quadrupled in the new millennium.

### Table 8: External resources as share of total health expenditure in Tanzania

<table>
<thead>
<tr>
<th>Year</th>
<th>96</th>
<th>97</th>
<th>98</th>
<th>99</th>
<th>00</th>
<th>01</th>
<th>02</th>
<th>03</th>
<th>04</th>
<th>05</th>
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<th>07</th>
<th>08</th>
<th>09</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>9</td>
<td>18</td>
<td>19</td>
<td>35</td>
<td>28</td>
<td>18</td>
<td>11</td>
<td>30</td>
<td>31</td>
<td>35</td>
<td>43</td>
<td>40</td>
<td>44</td>
<td>48</td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>


The share of external resources in the spending of the Ministry of Health and Social Welfare (MoHSW) ranges at around the same level, amounting to 38.5% of total expenditures in 2010/2011 (Ministry of Health and Social Welfare 2012: 14). As in the case of the MoEVT, the situation appears worse if one takes only the development budget into account: donors funded 97.8% thereof, which in practice means that the implementation of development programmes is almost entirely based on aid (Sikika 2011: 3). The fact that external money is largely earmarked and to a considerable extent provided off-budget leaves the ministry with little discretionary power over the use of development funding (Ministry of Health and Social Welfare 2009: 31). Although decision-makers complain about donors tying money to certain areas and topics, they hardly reject support – due to the budgetary situation of their ministry, “it is difficult for them to say no” (Interview 44), as a Tanzanian WHO officer put it. A retired health expert from Germany who had been working with officials in the health ministry for several years observed:

“They say ‘we have to take every penny we can get.’ Never would someone say ‘well, that actually doesn’t fit’.” (Interview 73)

The dependency on external resources is particularly extreme in HIV/AIDS governance. With a share of over 97% of expenditures, donors almost entirely finance the country’s national response. Table 9 displays the appalling discrepancy between government resources and donor spending on HIV/AIDS in the period 2006–2011.

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147 The figures presented in Table 8 relate to all channels of health spending (i.e. government, the private sector and NGOs). Data were extracted on 20 February 2014 (WHO 2014).
As the figures indicate, the dominance of external resources has slightly increased in recent years from an already high level in 2006/2007.\textsuperscript{148} Just as in South Africa, the United States through PEPFAR and the Global Fund are by far the largest funders: in 2010/2011, they provided 91\% of total aid on HIV/Aids of which the large majority was channelled outside the government system (TACAIDS 2012: 1), depriving the government of control and oversight. The absolute dependency on donors in tackling the epidemic poses a high risk for the country, making the implementation of the government’s national programme, the National Multi-Sectoral Strategic Framework for HIV and Aids, highly vulnerable to external decisions and developments (see case study, Chapter 6).

\textit{Comparative assessment of sectoral financial strength}

Drawing conclusions from budgetary figures is an intricate endeavour, given the lack of reliable and comparable data on government and donor spending at the sector level. Moreover, numbers always imply calculation and choice.\textsuperscript{149} Therefore, we tried not to rely on aid shares in departmental expenditures as an indicator of donor impact in the respective sectors, but complemented the figures with additional quantitative and qualitative material. Aggregating the information we obtained for each sector, we assessed their financial strength as follows: in South Africa, education and health are strongest in terms of finances; donor money only plays a minor role in these areas, apart from HIV/Aids where aid is a relevant contribution. Environment was assessed as

\begin{table}[h]
\centering
\caption{Government and donor expenditures on HIV/Aids in Tanzania}
\begin{tabular}{lcccccc}
\hline
\hline
Government expenditures in TSh billion & 22.0 & 23.0 & 14.0 & 12.5 & 11.0 \\
Donor expenditures in TSh billion & 282.0 & 383.3 & 566.9 & 566.3 & 431.8 \\
Total expenditures in TSh billion & 304.0 & 406.3 & 580.9 & 578.8 & 442.8 \\
Government share of total expenditures in \% & 7.2 & 5.6 & 2.4 & 2.2 & 2.5 \\
Donor share of total expenditures in \% & 92.8 & 94.3 & 97.6 & 97.8 & 97.5 \\
\hline
\end{tabular}
\end{table}


\textsuperscript{148} Unfortunately, figures for earlier years which would allow a comparison of government and donor spending on HIV/Aids over a broader time span could not be found. Data presented in the public expenditure review for 2003, the earliest version we have on hand, are based on rough estimates and the authors stress that spending figures of both government and donors are incomplete and inconsistent (Foster & Mwinyimvua 2003). Making calculations based on these numbers seems unrewarding and questionable in terms of reliability.

\textsuperscript{149} See Rottenburg (2000). The constructed character of figures is discussed in Chapter 5 on legitimation and accountability pressures in the aid context.
The Delusion of Knowledge Transfer

Weaker. Although from a national perspective, donor funding is marginal, it is a crucial source of income for environmental agents at national and provincial level. In Tanzania, education has the strongest position, although external money noticeably affects the implementation of national programmes. Health is more dependent on aid, with donors providing the bulk of the development budget. The weakest fields in our comparison are the cross-cutting issues of HIV/AIDS and environment which are almost entirely financed from outside. Table 10 displays our assessment, with ‘++’ indicating a high level of domestic resources (implying low financial dependency), and ‘--’ a low level of domestic resources (implying high financial dependency) at the opposite end of the scale. Admittedly, this illustration is over-simplified and not devoid of subjective interpretation.

<table>
<thead>
<tr>
<th>Table 10: Sectoral strength in terms of finances</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>South Africa</td>
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<tr>
<td>Tanzania</td>
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<tr>
<td>Environment</td>
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<td>-</td>
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<tr>
<td>Health</td>
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<td>HIV/AIDS</td>
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<tr>
<td>++</td>
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<tr>
<td>+</td>
</tr>
<tr>
<td>-</td>
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<tr>
<td>--</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>++</td>
</tr>
<tr>
<td>+</td>
</tr>
</tbody>
</table>

Source: Authors’ own illustration.

Administrative capacity

The implications of aid dependency for the bargaining power of recipients was a prime topic among interview partners. Yet, various narratives indicated that the financial situation is not the only structural condition that determines the scope of donor influence. A retired government member in Tanzania who previously held a high-ranking position in the Vice-President’s Office-Division of Environment, a unit in dire need of external funding, summarised his experience as follows:

*The extent to which [advisors] can influence the process depends on the strength the particular institution has. What carries the day is the arguments put on the table. If the technical advisor swallowed the arguments, it will carry the day. So it’s important to have a strong national team to be able to see through the presentations of technical advisors, so that the nuances or deviations or preconditions can be addressed there, transparently.* (Interview 66)
His statement points to the significance of what can be termed ‘absorptive capacity’ as a crucial precondition for dealing with expert advice (i.e. the ability of recipients to scrutinise expertise for its quality, relevance and implicit interests). Absorptive capacity requires the availability of adequate technical knowledge and critical competencies in public administration, which enable civil servants to utilise instead of being swayed by external advice. The weaker recipient bureaucracies are in terms of the critical competence of their internal staff, the higher is the risk that policy processes are influenced from outside. One could paraphrase this second hypothesis with the comment of a Tanzanian policy-maker in the Prime Minister’s Office referring to decision-makers in the senior government cadre:

*If they’re competent enough, they can really drive. But if they are not, they’ll be driven.* (Interview 60)

The argument is based on the cognisance that the senior administrative cadre plays a substantial part in policy processes. Bureaucrats are not only the decisive agents in operationalising political decisions into strategies, implementing programmes and managing public service delivery; as coordinators and informants of their political leaders they are also potentially able to exert significant influence on the government agenda. In theory,

*a well-institutionalized bureaucracy makes a vital contribution to the quality and coherence of decision-making through policy advice and the structuring of the decision-making process, even though the decisions themselves are taken outside the bureaucracy.* (Polidano 2000: 810)

In many developing democracies, however, bureaucracies are hardly capable of fulfilling this central policy function. While fragile institutions and low skills bases are legacies of the colonial rule in Africa, the erosion of the public sector was further exacerbated by decades of economic crisis. Structural adjustment programmes imposed by the international financing institutions compelled staff lay-offs and retrenchments, leaving administration with financial and human resources barely sufficient to run government operations (Weissman 1990). Given sharp declines in wage levels and worsening working conditions, highly skilled and experienced civil servants fled out of the public sector, poached by the private sector and international organisations which offered salaries vastly exceeding government pay.

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150 See Bräutigam (1992); Bräutigam & Botchwey (1999); Ocheni & Nwankwo (2012).
In light of such developments, today’s ‘capacity gaps’ identified in bureaucracies all over Africa should not be a surprise to donors whose policies and practices contributed to the problem. The common response of the international aid community has been to supply government organisations with advisors and consultants commissioned to assist policy-makers and senior officials. As outlined above, the expertise these professionals provide is inevitably infused with a distinct set of norms and values shared by the epistemic community of development experts; their advice must finally comply with the policy preferences and principles of their respective home organisation. From the angle of the recipient, it would thus be crucial to scrutinise advice offered in order to detect implicit interests and to assess its ‘political robustness’ (i.e. to examine whether it supports the domestic agenda and if respective recommendations are politically feasible). If this is not done, governments run the risk of adopting external policy ideas and concepts which may collide with the expectations of their constituencies or are just not implementable in the local context. Administrative capacity translated into absorptive capacity on the receiver’s part is thus crucial in three respects: first, to prove that external advice takes local needs and interests into account; second, to make knowledge from outside applicable by adjusting it to the local context and conditions; and third for the reason that without addressees capable to take up and utilise expertise provided, expert assistance may fill gaps, but not help to increase the policy capacity of government bodies in the long run. Without a critical mass of competent civil servants, advice is reduced to a form of external interference perpetuating the dependency on foreign expertise.

This implication, however, is wittingly or unwittingly disregarded by donors who justify the deployment of experts exactly with the weakness of recipient bureaucracies. The state of public administration in developing countries has entered the limelight since, parallel to the rise of the ‘new public management’ paradigm in economics, ‘good governance’ emerged as a core issue on the aid agenda in the 1990s.\textsuperscript{152} Although the latter has remained a fuzzy concept lacking a commonly shared definition, scholars have constructed a range of indices for measuring the state of ‘governance’ across the world. Most of them incorporate the quality of public administration into the assessment, focusing on

\begin{footnotesize}
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\footnotesize Since academic literature on these two concepts is too broad to be adequately summarised here, we point to only a few contributions: a central article laying the foundations for the concept of ‘New Public Management’ was Hood (1991); Hood and Peters (2004) provide a review on how NPM developed as a subject of administrative science and explore its intended and unintended effects on public sector reform. ‘Good governance’ as a core element of a new development strategy after the decade of structural adjustment was pushed to the fore by the World Bank (1989, 1992). Various scholars have discussed the relevance and implications of ‘good governance’ in developing countries, as, for instance, Appiah et al. (2004); Smith (2007); Kötschau and Marauhn (2008); Booth and Cammack (2013).
\end{footnote}
\end{footnotesize}
issues such as service delivery, management performance, resource efficiency, corruption or statistical capacity. Table 11 provides a compilation of the most widely known governance indices, displaying indicators related to public administration and the latest ratings of South Africa (SA) and Tanzania (TZ). In spite of using different methodologies, data sources and concrete variables, indices consistently rank the former higher than the latter. The Bertelsmann Transformation Index (BTI) – highly criticised for its normative and simplified approach of assessing governance systems – complements its numeric rating with narrative analyses. In the country report on Tanzania, the state of basic administration is delineated as follows:

The state maintains a basic infrastructure throughout the country. Administrative capacity however is weak and ineffective. Staff is poorly trained and often unprepared to carry out government goals; what’s more, the administration suffers under political interference, a result of more than 50 years of one-party rule (despite, according to the constitution, the country’s multiparty democracy established since 1992). As pay is low, administrative staff is uncommitted, often not accountable and susceptible to corruption. (Bertelsmann Stiftung 2014c: 8)

South Africa is rated two points higher achieving a score of 7 for basic administration, which according to the BTI codebook indicates that “administrative structures of the state provide most basic public services throughout the country, but their operation is to some extent deficient” (Bertelsmann Stiftung 2014b: 17). The country report points to the following constraints:

The quality of administrative bodies varies considerably, with capacity generally declining from the highest to the lowest levels of government. Major technical and managerial skill shortages exist and have an impact on efficiency with which various levels of government execute their mandate. In addition, corruption, nepotism, and maladministration, which drain state coffers, are causes for great concern. (Bertelsmann Stiftung 2014a: 8)

While the BTI surveys countries in transformation processes from all world regions, the Ibrahim Index on African Governance (IIAG) focuses only on African states. Despite the diagnosed deficiencies in administration, South Africa tops the IIAG ranking in the category Public Management with 76.9 points, and achieves the fifth rank out of 52 in Accountability. In both categories, the country scores much higher than Tanzania which ranges slightly above
Table 11: South Africa and Tanzania as assessed by governance indices

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
<th>Methodology</th>
<th>Scale</th>
<th>SA</th>
<th>TZ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>African Development Bank Country Policy and Institutional Assessment (CPIA 2012)</strong></td>
<td>Governance rating: Public sector management and institutions</td>
<td>Expert assessment</td>
<td>1 to 6 (=best)</td>
<td>4.83</td>
<td>3.93</td>
</tr>
<tr>
<td></td>
<td>Based on 5 criteria: property rights and rule-based governance, quality of budgetary and financial management, efficiency of revenue mobilisation, quality of public administration, transparency, accountability and corruption in the public sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bertelsmann Transformation Index (BTI 2014)</strong></td>
<td>Basic administration</td>
<td>Expert assessment</td>
<td>1 to 10 (=best)</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Assessment of basic administrative structures as one criteria of ‘stateness’</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ibrahim Index of African Governance (IIAG 2013)</strong></td>
<td>Accountability</td>
<td>Aggregation of various third-party data based on official figures and expert surveys</td>
<td>0 to 100 (=best)</td>
<td>65.2</td>
<td>42.1</td>
</tr>
<tr>
<td></td>
<td>Based on 7 sub-indicators on accountability, transparency and corruption in the public sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Public management</td>
<td>Based on 11 sub-indicators: statistical capacity, public administration, inflation, diversification, reserves, budget management, ratio of total revenue to total expenditure, fiscal policy, ratio of external debt service to exports, revenue collection, soundness of banks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Institutional Profiles Database (IPD 2012)</strong></td>
<td>Functioning of public administrations</td>
<td>Perception data gathered through expert survey</td>
<td>0 to 4 (=best)</td>
<td>2.41</td>
<td>2.37</td>
</tr>
<tr>
<td></td>
<td>Based on 14 sub-indicators: reliability of official economic information, transparency of economic policy, level of corruption, efficiency of tax administration, transparency in public procurement, functioning of the justice system, urban governance, influence of economic stakeholders, influence of donors, freedom to establish organisations, autonomy of organisations, capacity for state reform, capacity for sectoral reform, tax exemptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Worldwide Governance Indicators (WGI 2013)</strong></td>
<td>Governance effectiveness</td>
<td>Aggregation of various third-party data based on official figures and expert surveys</td>
<td>−2.5 to +2.5 (=best)</td>
<td>0.33</td>
<td>−0.69</td>
</tr>
<tr>
<td></td>
<td>Based on more than 40 indicators covering the (perceived) quality of public service and bureaucratic capacity in terms of policy implementation and service delivery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control of corruption</td>
<td>Based on 36 indicators covering the levels of corruption, transparency and accountability in the public sector</td>
<td></td>
<td>−0.15</td>
<td>−0.85</td>
</tr>
</tbody>
</table>

Source: AFD et al. (2012); African Development Bank Group (2013); Mo Ibrahim Foundation (2013); World Bank (2013c); Bertelsmann Stiftung (2014a).
the average level, but achieves only ranks 18 and 23, respectively. In the African Development Bank’s governance rating, Tanzania comes off slightly better in light of a smaller score difference to South Africa which is only superseded by Botswana in the country ranking. Referring to the Institutional Profiles Database and the Worldwide Governance Indicators, the discrepancy in administrative quality between South Africa and Tanzania appears even less pronounced.

This divergence of assessments hints at an important point regarding the use of governance indices: given that the strength of public institutions is not directly observable, all of them draw on proxy indicators which – as the term implies – can only indicate administrative capacity rather than give a realistic representation of it. The indicators are highly constructed and imply certain normative ideas of ‘good governance’ and sound public management. The level of accessibility to source data varies, and if one takes a closer look, one finds self-referential links across indices which to some extent call the validity of results into question. Aside from such methodological flaws, the indices present our research with the problem that they do not allow for a sectoral differentiation. To our knowledge, there is currently no measurement of bureaucratic quality disaggregated by sectors. In order to delineate the strength of public administration in the different policy fields under investigation, we therefore turn to interview material which we complement with ministry workforce data and information extracted from government reports. As we already know from the governance indices presented above, South Africa is stronger in general than Tanzania with regard to public service performance. In the following section, we examine whether we find sectoral differences in administrative capacity within the two countries, particularly in terms of staffing levels and in-house expertise. Thereby, the focus is mainly on the relevant line ministries as frame of reference.

Sectoral comparison of administrative capacity in South Africa

For the sectoral comparison of administrative capacity in South Africa, we primarily look at the Department of Environmental Affairs (DEA), the Department of Health (DoH), and the two national departments responsible

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153 The African average score was 53.4 for Public Management and 41.5 for Accountability.
154 The extent to which the different governance indices mutually resort to each other’s ratings as source data or decision guidance is noticeable. To give just one example: for measuring ‘governance effectiveness’, the WGI rating takes scores of the AfDB CPIA into account, namely on the quality of public administration, the quality of budgetary and financial management and the efficiency of revenue mobilisation. The experts doing the assessment for the governance rating of the AfDB CPIA, in turn, are advised to draw on ‘key sources of evidence’ amongst which the WGI category ‘government effectiveness’ is listed (African Development Bank Group 2009).
for education, that is, the Department of Basic Education (DBE) and the Department of Higher Education and Training (DHET). As part of their annual reports, these ministries disclose data on human resources in their organisations. Table 12 provides a compilation of (filled) post numbers, vacancy and turnover rates in 2011/2012. These figures reflect administrative capacity in terms of staffing levels: a high share of unfilled posts implies that the department has a rather insufficient number of officials to cope with the workload; a high turnover rate of staff is obstructive insofar as it means a permanent loss of practical knowledge in the organisation. Judged on the figures presented below, Environmental Affairs is the strongest department in terms of its staffing level, although being affected by a high turnover of personnel. With a vacancy rate of almost 30%, the Department of Health seems to be less adequately staffed, followed by Higher Education and Training with over 20% shortage.

Table 12: Staffing levels of South African line departments 2011/2012

<table>
<thead>
<tr>
<th>Department</th>
<th>Posts total</th>
<th>Posts filled</th>
<th>Vacancy rate</th>
<th>Turn-over rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Affairs</td>
<td>1,628</td>
<td>1,441</td>
<td>11.5%</td>
<td>10.6%</td>
</tr>
<tr>
<td>Health</td>
<td>1,819</td>
<td>1,293</td>
<td>28.9%</td>
<td>9.7%</td>
</tr>
<tr>
<td>Basic Education</td>
<td>823</td>
<td>628</td>
<td>17.1%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Higher Education and Training</td>
<td>1,077</td>
<td>843</td>
<td>21.7%</td>
<td>7.6%</td>
</tr>
</tbody>
</table>


There are various root causes for the problem of vacancies in the different departments. A common challenge for all departments is to fill vacant posts with adequately skilled applicants in line with the employment equity regulations. To overcome the racial discrimination and disparities in the labour market created under apartheid, the South African government pursues an affirmative action policy formalised in the Employment Equity Act which requires employers to ensure the equitable representation of previously disadvantaged groups in their workforce (Department of Labour 1998). The legacy of apartheid and its racially segregated school system, however, is still manifest in lower educational levels among the black population (Van der Berg 2007). Given that highly qualified professionals from the designated groups are scarce and attracted by higher salaries outside the public system, state organs are struggling to find suitable candidates for vacant positions. This is particularly an issue in environment as a knowledge area which previously was a “preserve of the whites” (Interview 8), in the words of a South African UNDP officer. A director in the provincial conservation authority CapeNature reported on the tedious search for black project managers with an environmental background:
We advertised up to four times to get someone. In the end we didn’t get one and then fell back to appointing a white male. (Interview 13)

As this example indicates, filling vacant posts with adequately trained professionals is often a complicated and lengthy process for government departments which are under pressure to ‘get equity figures right’ (Interview 13). Aside from this structural problem pervading all government bodies, the departments face distinct challenges in sourcing and retaining in-house expertise; these challenges emanate from political and institutional developments in the respective policy fields.

The Department of Health, which in 2011/2012 had the highest vacancy rate of the entities compared, is still struggling to recover from the era under President Mbeki and his Health Minister Tshabalala-Msimang who became infamous for the denial of Aids and antiretroviral treatment. During their leadership, “capacity fled out from the government system” (Interview 27), as a civil society representative put it. Many knowledgeable and experienced officials left the department due to its controversial policies, draining into the private sector or international organisations. A South African who resigned from public service during that time to work for a foreign embassy instead told us:

I was a project manager in government working in the Aids unit. And I must say it was very, very nice – very exciting work. But at that stage we had this terrible minister of health – Manto Tshabalala-Msimang. (...) And in 2003 I found myself apologising for where I worked and when I caught myself I realised I can’t do this anymore. (Interview 5)

When the new minister Motsoaledi came into office in 2009, he brought about a radical policy shift and initiated an organisational reform process reconfiguring administrative structures and staffing patterns. Nonetheless, it has remained difficult for the department to salvage the lost expertise. According to an HIV civil society activist, “very few people go in there other than as consultants” (Interview 27). The insufficient number of competent permanent staff severely weakens the administrative capacity of the department. This was mentioned as an issue by various South African interviewees with close contacts and working relations to the Department of Health, with one saying:

It’s shocking, because you can count the skilled people inside the government on one hand. And the same skilled people are trying to do everything – writing a human resource plan, writing Aids plans, writing national
health insurance. And they make a mess all of the time, because it’s just too much. (Interview 27)

At the sub-national level, the situation appears even worse. In 2009, reports on the performance of provincial health departments revealed fundamental shortcomings, “ranging from strategic planning and leadership, through to financial management and monitoring and evaluation” (Barron et al. 2009: 8). While much has already been tackled by the vigorous new minister, challenges in health administration at both national and provincial level still persist.

Another field in which renewed governance structures are a major cause for current capacity constraints is education. The low staffing levels in the basic education department and in higher education and training are largely a result of the fact that the two entities were formed out of one ministry. When the national Department of Education was split in 2009, financial and human resources needed to be divided and apportioned to the two newly structured administrative bodies, leading to budgetary and staff constraints on both sides (Department of Basic Education 2011). At the time of our research, this organisational transformation process was still underway. The newly established Department of Higher Education and Training was particularly affected by a high vacancy rate which posed serious operational problems, as the Annual Report for 2011/2012 states:

*The high number of vacancies inevitably had a negative impact on human capacity and therefore also on implementation. (...) The University Education Branch has severe capacity constraints which impact on the delivery of services. The most significant capacity problem is at a high level professional end. The post of Deputy Director-General remains unfilled. Of the nine director posts, only four are filled. In addition, some sections with high workloads have insufficient staff to cope with these.* (Department of Higher Education and Training 2012a: 143)

Interviewees from both the government and donor side confirmed that there is currently a huge vacuum at the higher education department, hampering policy development and implementation. The situation is thus equal to the one in the field of health: despite highly qualified individuals in office, administrative capacity is constrained due to an insufficient staffing level.

The Department of Environmental Affairs, in contrast, has a comparatively low vacancy rate and a strong team of competent officials. Various interview partners engaged in the environment sector highlighted the high degree of in-house expertise across government bodies at the national level, ranging
from the line ministry to public entities such as SANBI. A UNDP programme manager praised his counterpart officials in these institutions as follows:

Extremely well capacitated, you know, there are knowledgeable people writing articles and stuff, globally respected. Some of them are part of the negotiating team on biodiversity perspective. When you run the projects through them, you can see these guys are in full control. You have less stress, they deliver, they know what they want, they know where they are going, they are pretty at the play. They are on top of the game. (Interview 8)

The workforce of DEA and SANBI is largely made up of environmental specialists qualified with an academic degree up to the masters or PhD level; many are engaged in key policy platforms at the global level and strongly networked with the domestic and international science community. By way of example, a leading official in the biodiversity planning unit of the department sketched his professional background and work environment as follows:

Interviewee: I’m a conservation biologist. I’ve got two masters degrees, one from the UK. Presently, I’m a member of the Society for Conservation Biology. And I think that’s my link with the technical academic research (...). I’ve been affiliated with the TWNSO, the Third World Network of Scientific Organizations as well. So again, that is keeping me up to date in terms of what is currently happening in terms of research. And that actually informs the way the government addresses issues because the cutting edge research is flowing into these processes, whether it’s the minister’s speech or the presentations or participation in these various platforms that do exist. My job is predominantly to mainstream some of that thinking into the national processes.

Interviewer: ‘Thinking’ meaning scientific evidence?

Interviewee: Yeah, scientific evidence, scientific concepts we hear on the international platforms of engagements because South Africa is very prominent in international circles in the sense that we have many multinational environmental agreements. And our international work is quite robust because we’re always engaging in the technical working groups of the CBD [Convention on Biological Diversity]. I’m a member of the Ad Hoc Technical Working Group ‘Biodiversity for Poverty Eradication and Development’. And then there are other people as well deployed to various other technical working groups like SUBSTTA [Subsidiary Body on Scientific, Technical and Technological Advice] as well. (Interview 15)
While in general South Africa has an outstandingly strong administration in the environment sector, interviewees raised some flaws pertaining to the knowledge base in government. First and foremost, as mentioned earlier, environmental expertise is largely held by a group of people which is not representative of the South African demographics; the expert community in both government and science is still racially skewed, and the number of black scientists coming out of university is very limited. Moreover, there is a stark discrepancy in capacity between national and sub-national levels, as a UNDP officer commented:

At national level they’ve got tall expertise, you know, PhD people leading policies and stuff. (…) But you go to the provinces and then it becomes obvious, never mind the local municipalities – to find a person who can be able to tell you how climate change links with the development work they’re doing sometimes can be a challenge. (Interview 8)

The lack of environmental expertise in provincial and local government is particularly profound in distinct knowledge areas where specialists are required. The Environmental Sector Skills Plan for South Africa published in 2010 identified a scarcity of soil scientists, taxonomists, ecologists, environmental and resource economists, climate change scientists, or biotechnologists, amongst others (Department of Environmental Affairs 2010a: 19).

Despite such constraints related to the dispersion of (specialist) knowledge, however, the in-house expertise in government entities dealing with environment is substantial; this manifests itself in the fact that South Africa leads the way in certain areas such as spatial planning and in adopting innovative concepts of biodiversity management. In addition, there are well-established structures for policy dialogue and consultation in which domestic advisory bodies play a central role. In our sample, environment can thus be assessed as the strongest sector with regard to public administration and, hence, absorptive capacity.

Sectoral comparison of administrative capacity in Tanzania

Due to a lack of access to contrastable workforce data, assessing the administrative strength of sectors in Tanzania proves to be intricate. The shortfall of qualified staff is mentioned in literally all reports on sectoral performance in Tanzania. Most of them, however, remain superficial; very few authors support their claim with some sort of concrete evidence, which makes it difficult to differentiate the extent of the problem in different areas.
A comprehensive in-depth study on public sector capacity is available only for education. The Education Sector Human Resources Situation Analysis published in 2012 discloses detailed information on staffing levels on the delivery side of the education system (i.e. in schools and academic institutions, as well as on the governance side, i.e. authorities concerned with education at national, regional and district level). Aside from chronic shortages of teachers all across the system, the report reveals massive capacity gaps in the respective ministries, both in terms of numbers and expertise (Omari & Baser 2012). A case in point is the Department of Policy and Planning, a key unit within the Ministry of Education and Vocational Training (MoEVT). At the time the study was conducted, the planning section entailed only seven officials most of whom lacked training or experience in planning; out of the eight persons working in the Education Management Information System unit in charge of producing and processing educational data for the department, only four had adequate IT qualifications (Omari & Baser 2012). The lack of professionals with specialised training is also a sign of the generally low educational level of staff. As Table 13 indicates, less than 50% of the workforce holds an academic degree (including bachelors, postgraduate diplomas, masters or PhDs):

Table 13: MoEVT staff by educational level

<table>
<thead>
<tr>
<th>Educational level</th>
<th>Number</th>
<th>Share of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate</td>
<td>142</td>
<td>34.6%</td>
</tr>
<tr>
<td>Ordinary Diploma</td>
<td>42</td>
<td>10.2%</td>
</tr>
<tr>
<td>Advanced Diploma</td>
<td>44</td>
<td>10.7%</td>
</tr>
<tr>
<td>Bachelors</td>
<td>70</td>
<td>17.1%</td>
</tr>
<tr>
<td>Postgraduate Diploma</td>
<td>20</td>
<td>4.9%</td>
</tr>
<tr>
<td>Masters</td>
<td>88</td>
<td>21.5%</td>
</tr>
<tr>
<td>PhD</td>
<td>4</td>
<td>1.0%</td>
</tr>
<tr>
<td>Total</td>
<td>410</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Education Sector Human Resources Situation Analysis (Omari & Baser 2012: 171).

At the sub-national level, the situation looks similar if not worse: regional and district offices are affected by high vacancy rates and insufficiently skilled staff. The authors of the report made the observation that “many district education officers, even sometimes the primary and secondary DEOs [District Education Officers], were not comfortable in English” (Omari & Baser 2012: 179).

In addition to the weak bureaucratic workforce in the national ministry and local government authorities, governance in education has further been exacerbated by the lack of overall guidance. For years, a range of decisive
leadership positions, including the Commissioner of Education, the Chief Inspector of Schools, as well as various director posts, were only filled with acting managers who were neither adequately qualified nor able to develop a strong steering capacity (Omari & Baser 2012) – “there are not the right people in the right position” (Interview 45), a Tanzanian expert working for the World Bank commented. All in all, the administrative capacity in education can be assessed as severely constrained.

The situation in health does not look much better if looking at the overall sector which is facing a serious human resource crisis (School of Public Health and Allied Sciences 2009). The Health Sector Strategic Plan III 2009–2015 illustrates the dimension of the problem with alarming numbers:

>The total of staffing in the health sector stands at 35% of the actual need according to defined staffing norms. The available number of professional health workers in the public sector is 35,202 and deficit is 90,722 (...). There is an enormous shortage of human resources for health across all cadres: clinicians, nurses, pharmaceutical technicians, laboratory technicians, radiographers, physiotherapists, health officers and health administration cadres. (Ministry of Health and Social Welfare 2009: 29)

The human resource scarcity also affects the Ministry of Health and Social Welfare as the main national governance body, translating into insufficient staffing levels, particularly in terms of certain specialists. At the time of our research, for instance, the ministry had only three health economists at its disposal who were hardly able to cope with the immense workload on their desks. Yet, while the administrative capacity is constrained in terms of numbers, the staff in office is said to be skilled and competent – an issue which was emphasised by various interviewees from both government and donor side. A Tanzanian WHO officer pointed out:

>It is the numbers and the skills mix in the ministry which need to be made right. But the level of qualification is tough, certainly very high. (Interview 44)

In a similar vein, a German health expert with years of working experience in Tanzania commented:

>In the ministry of health as well as in the universities, we do have fairly competent people. The issue is, simply put: While in Germany we have 6,000 competent people, there are six of them in Tanzania. Those who are really capable are thin on the ground. (Interview 73)
One of the few health economists within the Ministry of Health confirmed this outside perception from her perspective as follows:

*We can manage. We’re doing it. We really stretch ourselves, but it’s not as serious as it was. (…) A challenge might be the shortage, but not the capacity – few people, many tasks, but not the capacity.* (Interview 54)

That the Ministry of Health, although being understaffed, can resort to a civil servant cadre which is comparatively strong in terms of in-house expertise is a crucial asset for health governance. There are however also constraints which hamper the overall bureaucratic performance: varying capacities in regional and district authorities which obstruct the implementation of policies and health service delivery, a high level of staff circulation and brain drain into international organisations and the private sector, and poor recruitment practices leading to intervals in which decisive positions are filled with acting officials who lack the confidence and competencies to assume leadership. Yet, the dimension of such problems appears far smaller than, for instance, in education.

Rating the administrative capacity in environment is intricate insofar as different public entities are concerned with the matter – the Division of Environment in the Vice-President’s Office, the Forestry and Beekeeping Division in the Ministry of Natural Resources and Tourism, the National Environmental Management Council and the Local Government Authorities, to name just the most important ones. A cross-cutting assessment made by internal and external evaluations is that overall, environmental governance is severely constrained by a shortage of qualified staff across all bodies, particularly at district level (Vice-President’s Office 2007; Edwards et al. 2012; Nindi 2012). Similar conclusions were drawn by government and donor representatives dealing with environment-related issues such as climate change or forestry. A World Bank specialist put it straight, saying:

*They just don’t have enough people, they don’t have the skills.*

(Interview 46)

This statement hints at one important point made by many of those interviewed, namely that skills related to leadership, management, strategic planning and analysis are lacking in national ministries, rather than environmental expertise.

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155 At the time of interviewing in 2013, the positions of the permanent secretary, the chief medical officer as well as the director of policy and planning within the Ministry of Health were filled with acting officials.
A Tanzanian programme officer working for the Danish Embassy commented on the capacity of her counterparts in government:

*These guys are well trained experts. But in the field of leadership and management, there they have a problem.* (Interview 33)

At least for the Division of Environment, the claim that individuals in national bodies are well-trained can be confirmed with information on the educational profile of its workforce. In 2008 when the Human Resources Training Strategy for DoE was drafted, the unit had 54 employees made up of 38 professionals and 16 support staff. Three officials held a PhD and 29 a masters degree, that is, 60% of all staff were educated to masters degree level or higher (Draft Human Resource Training Strategy, VPO-DoE, April 2008, as cited by Inka Consult 2008: 7). Compared to the education ministry, where masters and PhD holders together made up only 22.5%, the DoE has a highly qualified team in terms of technical knowledge. Nonetheless, there is a fundamental flaw in capacity which a counsellor in the Finnish Embassy described as follows:

*Having a kind of strategic view of the things – where do we want to move? What do we want to do? How do we make it happen? This kind of strategic thinking I see is very often missing.* (Interview 36)

In addition to the deficiencies in terms of these kind of competencies, the division of environment as well as other public entities are short of specialists in certain knowledge areas, as a high-ranking official admitted:

*There are some emerging issues on climate change, for example, on the capture for greenhouse gases. We don’t have experts in Tanzania. Even if we have, there are very few who are not ready to be employed for a long time period under contract.* (Interview 67)

Aside from climate change specialists, interviewees pointed to a shortage of professionals trained in issues such as resource and risk assessment, geographic information systems, or private forestry management. Given the scarcity of specialist knowledge, the deficiencies in terms of critical competencies and the enormous lack of adequately trained officials at sub-national level, the administrative capacity in the environment sector is severely limited.
Comparative assessment of administrative capacity in South Africa and Tanzania

The initial assumption was that administrative capacity on the recipient side is a crucial dimension determining the extent to which external experts are able to influence policy processes through advice, administrative capacity being understood as the strength of public entities in terms of their in-house expertise and staffing levels. Based on the findings presented above, we rank the capacity of administration in different policy fields as follows: the strongest area in the comparison is environment in South Africa, having a capable cadre of civil servants and in-house expertise at its disposal. The qualification levels of officials in health and education are similarly high, but the two sectors are affected by relatively high vacancy rates in line ministries, which to some extent limit their bureaucratic performance. In Tanzania, public administration generally suffers from insufficient staffing levels and a scarcity of specialists. While governance in health and environment stems from a small number of highly qualified individuals which ensures a certain level of in-house expertise, the education sector lacks a critical mass of competent staff at all levels. Table 14 displays our assessment, with ‘++’ indicating a high level of administrative capacity, and ‘--‘ a low level of administrative capacity at the opposite end. Again, it is important to note that the table serves as means of illustration, not as a quantifiable scale.

Table 14: Sectoral strength in terms of administrative capacity

<table>
<thead>
<tr>
<th></th>
<th>South Africa</th>
<th>Tanzania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>++</td>
<td>-</td>
</tr>
<tr>
<td>Health</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Education</td>
<td>+</td>
<td>--</td>
</tr>
</tbody>
</table>

Source: Authors’ own illustration.

Local knowledge base

Equally to the absorption capacity of administrations, the third dimension of recipient strength relies on the general educational level of a given society: we refer here to the strength of the local knowledge base in the widest sense, and more specifically to the size and quality of a country’s science community. Again, the assumption is that a crucial condition for recipients to develop their own agenda without being driven from external advice is the availability of domestic sources from which alternative expertise can be obtained. The argument put forward reads: the stronger the local knowledge base and its
voice in the policy discourse, the smaller is the scope of influence for outside actors.

This hypothesis implies two basic premises of democracy theories and sociology of science. The first is that in modern democracies, scientific knowledge serves both a problem-solving and legitimating function for political rule: it is required to find solutions for societal challenges and to demonstrate rational decision-making based on certified ‘evidence’ (Weingart 2003; Stehr 2010). The second is that scientific knowledge, despite its universal truth claim, is always – though to a varying extent depending on the discipline – contextual and culture-specific, transmitting certain constructs, beliefs and values of the epistemic community from which it is generated (Knorr-Cetina 1981; Knorr-Cetina 2007). For democratic governments, it is thus essential to have an endogenous knowledge base to draw on in order to take decisions informed by and sensitive to a society’s historical, cultural and political imprint.

Many developing democracies, however, lack this fundamental requisite and resource of governance, given the weak state of their science systems. The persistent import of Northern knowledge is problematic insofar as it keeps them in a perpetual status of dependency, and restrains them from developing a genuine policy agenda which rests on their own societies’ set of norms and experiences implied in local knowledge. As Girvan (2007: 40) points out,

> autonomy – the right to choose one’s path to development and to act in function of that choice – cannot be secured without a knowledge base. As long as the South is dependent for its development knowledge on the global centres of power, its own autonomy will be compromised.

This argument does not convey the claim that autonomy emanates from “intellectual autarchy” (Girvan 2007: 32) which in a globalised world would neither be viable nor helpful. Instead, it makes the point that developing countries require a local knowledge base as a counterweight against the dominant body of knowledge provided by the North that transmits certain ideologies, shutting off alternative meaning and interpretation. Ideally, domestic science communities are able “to filter this [knowledge] through a conscious process of selection, evaluation and adaptation to local circumstances” (Girvan 2007: 32), and to provide the intellectual ground for problem solutions which take the existing social conditions into account. Without endogenous science systems which serve as absorptive and knowledge-producing entities, recipient governments are likely to be driven by external expertise, remaining “consumers (of knowledge) and implementers (of advice)” (Girvan 2007: 22).

As early as in 1969, the Advisory Committee on the Application of Science and Technology to Development of the UN Economic and Social Council stated
in its ‘World Plan’ “that there is a fundamental necessity to build up indigenous scientific capability in the developing countries” (United Nations Economic and Social Council 1971: 102) which would enable them to define, analyse and solve nation-specific problems and boost economic production. The report expounds the problem of deficient knowledge production and points at the hurdles obstructing the development of solid science systems in developing countries. Today, the situation seems little better, if not worse in some respects. Africa’s share in global science as measured in publication output has been steadily declining over the past 20 years, which reflects the widening gap of knowledge inequality between the Northern hemisphere and the global South (Mouton et al. 2008; Weingart 2006).156 Despite some sporadic improvements, science in developing countries faces the same problems today as identified more than 40 years ago: a deficient research infrastructure, scarcity of human resources exacerbated by brain drain of scientists, poor science governance, and chronic underfunding which results in a destructive dependency on foreign financiers, to name just the major hitches (United Nations Economic and Social Council 1971; Mouton 2008; Mouton et al. 2008). Assessing the state of public science in the Southern African Development Community (SADC) region,157 Mouton et al. (2008: 199–200) diagnosed a “de-institutionalisation” of science systems of which many operate in a “subsistence mode” struggling to reproduce themselves.

A country which counts as an exception is South Africa. With regard to scientific productivity, it is at the forefront of the continent and by far leading in the region (Mouton et al. 2008; African Union–New Partnership for Africa’s Development 2010). Table 15 displays publication output and other indicators which are widely used to compare the strength of science systems across the globe, using data published by the African Innovation Outlook 2010 (African Union–New Partnership for Africa’s Development 2010). A standard measure in this context is the gross domestic expenditure on research and development (GERD) as a percentage of the gross domestic product (GDP). While the countries with the highest research and development intensity in the world exceed 3% (e.g. Finland, Sweden or Japan), the African Union has recommended a 1% GERD/GDP ratio to its member states (Executive Council of the African Union 2006; European Commission 2014). Yet, among the countries reviewed by the African Innovation Outlook 2010, this target has only been reached by

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156 According to Mouton et al. (2008: 199), “Africa has lost 11% of its share in global science since its peak in 1987; Sub-Saharan science has lost almost a third (31%).”

157 The SADC comprises 15 member states in southern Africa, namely Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe (Southern African Development Community 2012). The bibliometric analyses by Mouton et al. (2008) did not include the Seychelles.
Malawi, Uganda and South Africa; the percentages of the remainder ranged between 0.20% and 0.48% which was achieved by Tanzania (African Union–New Partnership for Africa’s Development 2010). A look at the human resource base in science reveals an even greater discrepancy between South Africa and Tanzania. With 825 researchers per million inhabitants (40 084 as headcount), the density of researchers in South Africa is more than ten times higher than in Tanzania, with only 67 researchers by million population (2 755 as headcount). As Weingart (2006: 173) argues, it is questionable whether such a small number of scientists can make up a “critical mass to even sustain an internal intellectual community, let alone a differentiated one”.

Given the stark contrast in human resources for science, it is not surprising that there is a similar divide in terms of research productivity as measured in the number of publications. According to the Scopus database, South Africa produced 86 649 scientific articles during 1990–2009, around fifteen times as many as Tanzania (5 642) (African Union–New Partnership for Africa’s Development 2010). Broken down per million inhabitants, the average annual output during 2005–2009 was 135 papers in South Africa against 12 papers in Tanzania (African Union–New Partnership for Africa’s Development 2010).

Table 15: Research and development indicators for South Africa and Tanzania

<table>
<thead>
<tr>
<th>R&amp;D indicators</th>
<th>South Africa</th>
<th>Tanzania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross domestic expenditure on R&amp;D (GERD) as % of GDP (2007)</td>
<td>1.05</td>
<td>0.48</td>
</tr>
<tr>
<td>Number of researchers (headcount)</td>
<td>40 084</td>
<td>2 755</td>
</tr>
<tr>
<td>Researchers per million inhabitants</td>
<td>815</td>
<td>67</td>
</tr>
<tr>
<td>Scientific output by country in papers listed in the Scopus database (1990–2009)</td>
<td>86 649</td>
<td>5 642</td>
</tr>
<tr>
<td>Average annual papers per million inhabitants (2005–2009)</td>
<td>135</td>
<td>12</td>
</tr>
</tbody>
</table>


Using the standard indicators for measuring research and development, it is evident that South Africa in general has a much greater scientific potential and higher level of research productivity than Tanzania, whose participation in the global science system – equivalent to most other African countries – seems miniscule.\(^{158}\) Yet, one needs to consider that the set of indicators presented in the table above is tainted with a fundamental bias which discriminates against developing countries in several regards. First, it sets a Western

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\(^{158}\) According to a bibliometric analysis based on the Scopus database and conducted by Arencibia-Jorge et al. (2012), Tanzania’s share of the world scientific production from 1996 to 2009 was 0.03% while South Africa accounted for 0.39% in the same period.
concept of science systems and respective features as frame of reference for
the assessment which has fundamental implications (Weingart 2006). For
instance, the scope of databanks used to measure scientific output is limited
to prestigious journals, most of which are published in the North (Gaillard
2010). Given that a large part of research findings of developing countries is
disseminated in media and journals which are not captured by the common
indexes, their contribution to global knowledge production is marginalised if
solely assessed on the basis of the highly selective data sources. Hence, various
authors point out that the standard indicators most probably fail to provide an
adequate account of science in the developing world, emphasising the need for
additional descriptors and narratives (Mouton 2007; Gaillard 2010).

In the following attempt to briefly sketch out the strength of science in South
Africa and Tanzania by sectors, we therefore complement bibliometric data with
qualitative information drawn from different reports and interview statements.
Aside from delineating the size and quality of the local knowledge base in the
respective fields, we also consider the extent to which institutionalised links to
the policy sphere are existent.

The starting point of the analysis is Table 16 which presents publication
output by relevant subject areas from 1990 to 2013 on the basis of scientific
documents captured by the Scopus database:

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>South Africa</th>
<th>Tanzania</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of papers</td>
<td>% of total output</td>
</tr>
<tr>
<td>Health related</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicine</td>
<td>41 644</td>
<td>17.0</td>
</tr>
<tr>
<td>Immunology and</td>
<td>8 837</td>
<td>3.6</td>
</tr>
<tr>
<td>microbiology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Professions</td>
<td>1 995</td>
<td>0.8</td>
</tr>
<tr>
<td>Nursing</td>
<td>1 660</td>
<td>0.7</td>
</tr>
<tr>
<td>Environment related</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental science</td>
<td>13 587</td>
<td>5.6</td>
</tr>
<tr>
<td>Earth and planetary science</td>
<td>15 021</td>
<td>6.1</td>
</tr>
<tr>
<td>Education</td>
<td>1 552</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Source: Scopus database.

For the bibliometric data, the Scopus database was accessed on 11 and 12 March 2014. We did
not limit the search to articles, but included all document types (e.g. conference papers or book
chapters) as they also contribute to scientific output in a wider sense. Since education is not a subject
area of its own in the Scopus database, we set the search condition that education must either be
mentioned in the article title or be a keyword; we specified the results further by limiting them to
those related to the subject areas social science, psychology, arts and humanities, mathematics and
Strength of Tanzanian science in health, environment and education

In the Tanzanian science landscape, the leading role of health is reflected by the composition of the country’s scientific output: in the period 1990–2013, health-related areas (medicine, immunology and microbiology, health professions, nursing) together accounted for 42.6% of all publications. Environment is also a relatively strong research area, making up 10.8% if summing up contributions of environmental science and earth and planetary science. Education, in contrast, is almost insignificant in terms of publication output, with only 81 papers over a period of 14 years which amounts to a share of only 0.5%.160

Health research in Tanzania is conducted by government and private health research institutions of which the most productive and prestigious are the Muhimbili University of Health and Allied Sciences (MUHAS), the National Institute for Medical Research (NIMR) and the Ifakara Health Institute (IHI). While MUHAS is the only public university in Tanzania offering degree programmes in health sciences, NIMR serves as a parastatal entity under the Ministry of Health, mandated to conduct and coordinate medical research; the IHI is an independent non-profit organisation founded by the Swiss Tropical Institute which has acquired international renown, particularly for its contribution to malaria research. According to interviewees, the scientific capacity of these bodies varies; Ifakara is said to have the most capable cadre of highly skilled and well-trained scientists. A cross-cutting constraint, however, is the small human resource base of the relevant organisations. Referring to IHI, a Danida health advisor stated:

*I think they’ve got some excellent people, but a few excellent people aren’t enough to do a huge amount of work.* (Interview 34)

The small number of researchers is certainly a major cause of the limited capacity of health institutions. Another problem obstructing the production of policy-relevant science is their huge dependency on foreign financiers. While

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160 The dominance of health and relative strength of environmental science in Tanzania have also been pointed out by previous studies using bibliometric data, as for instance African Union–New Partnership for Africa’s Development (2010) and Arencibia-Jorge et al. (2012).
the Tanzanian government contributes some core funding, research activities are almost entirely financed from outside: from 2007 to 2010, NIMR did not receive any research budget from government side (Magesa et al. 2011); the Ifakara Health Institute states on its website that 80% of its annual income comes from competitive grants provided by foreign sources (Ifakara Health Institute 2014). Given this situation, focusing on national research priorities is more or less impossible, as a senior scientist working at IHI reported:

So basically, you can set your agenda saying I’ll work in these areas. But working on what you really can’t determine, because you are responding to a call for proposals. (Interview 68)

Given that health research in Tanzania is mainly driven by external funders, it is not surprising that the uptake of findings by policy-makers is limited. Although IHI is increasingly recognised as a source of expertise by both government and donors, the exchange between research bodies and the Ministry of Health is still sporadic. Hence, the impact of Tanzania’s scientific community on health is rather small, although there are “pockets of long-established research excellence” (Irikefe et al. 2011: 558).

Similar patterns, but an even more strained situation are found in the area of environment. The Sokoine University of Agriculture (SUA) in Morogoro and the University of Dar es Salaam with its Institute for Resource Assessment (IRA) are the most productive producers of environmental science in Tanzania. While individuals working for these institutions are highly reputed scientists engaged in international research activities and expert forums, they are too few in numbers to build a sustained local knowledge base. Academic staff lack the time and financial resources for carrying out independent quality research on a larger scale. On its website, the Sokoine University of Agriculture indicates that 98% of its research activities are externally funded (Sokoine University of Agriculture Directorate of Research & Postgraduate Studies 2014). While we were unable to obtain concrete figures on IRA’s budget and the share of foreign funding, a high-ranking staff member made the following statement on this:

The way it is, is that in the absence of donor support from outside, we cease even to be called researchers because there aren’t much resources available. (Interview 69)

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161 The National Environmental Management Council (NEMC), the government’s advisory and regulatory agency, is supposed to carry out research according to its mandate, but its output is miniscule. In the Scopus database, only nine articles in the period 1990–2013 are listed with institutional affiliation to NEMC.
Aside from occasionally contracting individuals for consultancies, the government does not regularly use the local science community available as a source of environmental expertise. There are a few, mostly donor-funded, initiatives to establish dialogue between policy-makers and scientists on environmental issues – as, for example, the ‘Environment for Development’ centre or the ‘Decision Makers Forest Academy’ – but their scope of impact is limited. All in all, Tanzania’s local knowledge base in environment is small, and there are no structures in place through which national research findings would be disseminated to inform policy-making.

The weakest area in terms of scientific capacity, however, seems to be education. With only 81 articles over a period of 14 years, the output in this field is marginal. The University of Dar es Salaam is the most significant producer, accounting for almost 50% of all publications; the only other institution which has a double-digit number of contributions is the Tumaini University in Iringa. The figures confirm the perception articulated by various interviewees that educational research in Tanzania hardly takes place. A civil society representative described the state of the local knowledge base in education as follows:

*I’m going to say something politically incorrect. You are assuming there is a local expert community – I don’t think there is one that is worth its salt. There are local experts, individual experts, but we don’t have serious think tanks (...). The universities, I can’t point you to a single department or programme of work that I can say, this is incredibly solid research and analysis and thinking and creative programme development. So what are universities, what is the state of our universities? We have expanded them dramatically to democratise access; they have become large factories of lecturing. Most professors and lecturers are busy doing consulting, and so you quickly do what you have to do at the university, often not even do that, you know, they’re often away. If somebody did a careful noting of attendance, you’ll find they are often away even for your basic lectures. And then they’re going round doing consulting work, of which each piece may have some utility, but it doesn’t add up to a body of work. So I don’t think there is a local expert community in Tanzania (...). There are individual experts, but there is no community, there is no coherence.*

(Interview 70)

While interviewees from the donor side put it less bluntly, they consistently assessed the capacity of the science community in education as very low. Notably, the only one articulating that the local knowledge base would be sufficiently strong was a director in the education ministry who stated:
Well me, I think we have capacity (…). In the Institute of Education here which is working with the curriculum development, we have enough and learned sort of personnel. And we have people in the universities who have travelled widely. They have been engaged in different consultancies here and there, they are knowledgeable (...). (Interview 49)

The Tanzania Institute of Education (TIE) the official referred to is a parastatal organisation under the Ministry of Education and Vocational Training in charge of curriculum development, teacher training, quality assurance and technical advice; it has a so-called ‘Research, Publication and Consultancy Section’ which is commissioned to conduct evaluations and research on educational matters (Tanzania Institute of Education 2014). While TIE is used by the government as a source of in-house expertise, it is not producing scientific output in a strict sense.

As both statements quoted above indicate, cooperation with university experts on education is limited to ‘consultancies here and there’. From the perspective of various interview partners, there is no serious engagement between policy-makers and academia, and little receptiveness towards research on the part of the education ministry. A university professor of education commented in this regard:

You need a minister who shows interest. But we have (a) minister who I don’t think shows interest in any research of the academic world.
(Interview 71)

This lack of interest on the part of the political leadership is reflected by the absence of a “formalised system” (Interview 45) facilitating exchange between policy-makers and scientists in education. In light of the interview narratives and the bibliometric figures presented earlier in the chapter, it can be said that independent educational research in Tanzania is almost non-existent; the impact of the country’s few academic educationalists is narrowed down to consultancy work which does not result in the emergence of an endogenous local knowledge base.

**Strength of South African science in health, environment and education**

South Africa has a solid science community which in many fields significantly contributes to global knowledge production. Comparing productivity in terms of publications, health-related sciences are at the top of the three areas under review, accounting for 22.1% of the total output from 1990 to 2013 (see
Table 16), followed by environment-related sciences with 11.7% and, at the low end, education with 0.6%.

In health-related science and particularly in HIV/Aids research, South Africa has a whole range of universities which are internationally renowned for their scientific performance, such as the University of Cape Town, the University of Witwatersrand in Johannesburg or the University of Stellenbosch, to mention just the most prolific ones. In addition, the country has well-established parastatal bodies such as the South African Medical Research Council (MRC) and the Human Sciences Research Council (HSRC) which cover a broad spectrum of relevant subject areas. While these institutions deliver high-level and sometimes “global ground-breaking research” (Interview 27), as a civil society activist put it, they are yet faced with structural constraints typical of science systems in developing countries, namely a small human resource base and dependency on external financing. Expertise is stretched rather thinly, particularly offside the HIV/Aids research field. Reputed scientists are under constant pressure trying to cope with teaching obligations, generate third funding streams through conducting studies for multiple clients and respond to national priorities, while being dependent on foreign financiers. In HIV/Aids and TB research, for instance, more than 70% of the total funding comes from outside, less than 30% from local sources (Senkubuge & Mayosi 2013). Health research in South Africa is thus heavily influenced by the agendas of overseas sponsors; a senior scholar at the Institute of Infectious Disease and Molecular Medicine of the University of Cape Town stated upfront:

*Of course you’ve got the potential conflict of who sets the agenda, who owns the agenda. And in a way I think we need to acknowledge that we’ve become scientific prostitutes in the sense that we are giving in to the highest bidder for our services. And it is actually much easier in the health field to get your money from abroad.*

This issue of domestic underfunding was also raised at a National Health Research Summit held in 2011 to discuss the state of South Africa’s health research and to make it more responsive to national challenges (Mayosi et al. 2011). The event was deemed an attempt to strengthen the ties between the health department and the science community after the breakup of relations during the Mbeki administration caused by the conflict around Aids and antiretroviral treatment. Health Minister Aaron Motsoaledi is perceived

162 This statement was made in the context of an exploratory interview for the research project conducted in 2007.
as hardly trying to establish a closer dialogue with the country’s science community; as a professor at the University of the Western Cape commented:

“That’s a shift from a kind of vacuum at the centre to the re-emergence of a leadership that is willing to engage in a much more explicit way with South African knowledge communities, there’s no doubt about that.”
(Interview 28)

All in all, it can be stated that South Africa’s local knowledge base in health is made up of a cadre of researchers which is small, but highly productive and increasingly used by policy-makers as a source of endogenous expertise.

The country’s strongest scientific impact, however, is in environment-related disciplines. According to the Thomson Reuters Global Research Report Africa 2010, South African plant and animal sciences had the highest share of world publications (1.55%) out of any field in Africa, followed by environment and ecology (1.29%); the report further states that “many of South Africa’s most highly-cited papers in this field pertain to climate change and its effects on plant propagation” (Adams et al. 2010). Among the most prolific producers are some which are also leading in health, such as the University of Cape Town, the University of Witwatersrand, and the University of Pretoria. Aside from a range of universities, parastatal bodies such as the Council for Scientific and Industrial Research (CSIR) with its Natural Resources and the Environment unit, as well as SANBI, are key contributors to environmental research. The science community operating within these institutions is regarded as “one of the tops in the world” (Interview 8), as a leading UNDP expert stated. Similarly, as in health, however, it is small in terms of human resources and still racially skewed, as an environmental specialist explained:

“There is just a selective few individuals that are champions for the various initiatives. In terms of capacity, we don’t have capacity in the sense that – it’s lying only in a group of people and that group of people is not representative of the South African demographics. So in that respect, the skills development is needed – especially black scientists, it’s very limited in the country, because science does not support a fast track transformation agenda.” (Interview 15)

In addition to this structural problem, there are some imbalances with regard to the performance in particular subject areas. Animal sciences are traditionally weaker than the botanical sciences, and there are some areas such as resource economics and biotechnology where expertise is scarce. Nonetheless, the South African science community in environment is broad enough to build
The Delusion of Knowledge Transfer

a solid local knowledge base which substantially informs policy-making through its presence in advisory task teams or its contribution to the State of the Environment report. In 2012, the Department of Environmental Affairs published an ‘Environment Sector Research, Development and Evidence Framework’ seeking to further enhance and institutionalise the exchange between researchers and policy-makers (Department of Environmental Affairs 2012b). In short, environmental science in South Africa is highly recognised in academic and policy circles, both at the national and international level.

Finally, we look at South Africa’s capacity in educational research. As the bibliometric figures indicate, its contribution to the overall science output is rather small, at least compared to health and environmental sciences. The most prolific producers in this area are again the well-known universities, with the University of Cape Town leading the way, followed by the universities of Witwatersrand, Pretoria and KwaZulu-Natal. Moreover, the Education and Skills Development Unit in the Human Sciences Research Council is a key body conducting studies on all kinds of educational matters related to schooling, teaching and learning from primary school to higher education. As an analysis of publications and academic projects indicates, South African educational research covers a broad spectrum of topics and disciplinary areas, ranging from educational theories to studies on classroom practice (Deacon et al. 2009). Yet, its methodological scope is rather narrow: in the period 1995–2006, “94% of education research has been small scale research, usually qualitative, often conceptual and frequently eclectic, (…) while hardly any (costly, time-consuming and often quantitative) large scale research has taken place, with only 1% of the database falling into this category” (Deacon et al. 2009: iv).

The authors of the analysis attribute the lack of longitudinal large-scale studies, which would provide more systemic findings, partly to the prevailing ‘publish or perish’ pressure on academics, but also

“to the limited availability of research funding, the equally limited availability and often poor quality and unreliability of existing data, a widespread lack of research capacity and experience, and reduced time available for research due to increased teaching and administrative workloads.” (Deacon et al. 2009: 14)

Despite constraints in terms of funding and human resources, however, educational scholars form a solid knowledge base which the government regularly draws on. There seems to be a frequent exchange between the two educational departments and the academic community through conferences and workshops (see, for instance, Department of Basic Education 2014a, c), and
a variety of key reports informing policy decisions are compiled by university experts (see, for instance, Van der Berg et al. 2011). Hence, although the size and output of educational research in South Africa is small compared to other disciplines, it is recognised and used.

Comparative assessment of the local knowledge base in South Africa and Tanzania

On the basis of the bibliometric figures and qualitative information presented above, we rank the different fields under review as follows: environmental sciences in South Africa provide the strongest local knowledge base which substantially contributes to global science and has a strong presence at the national and international level. Although health sciences have a higher output in terms of numbers, the local knowledge base in this field is assessed to be weaker since it is highly concentrated on one particular subject, that is, HIV/Aids, and due to its dependency on external financing subject to the agendas of outside players. Educational research does not face this problem to the same extent, but the size and output of the research community is much smaller. We nonetheless rank it at the same level as health, since the core of educational scholars provides solid research which to a considerable extent informs policy-making. Tanzania’s scientific capacity is much lower than that of South Africa which dominates African science in general. Given the prevailing lack of human and financial resources, science communities in Tanzania across all disciplines are struggling to maintain their basic subsistence, let alone to produce research under poor working conditions. Yet, “pockets of significant science” (Mouton et al. 2008: 200) are found, particularly in the areas of health and environment where small cadres of highly qualified scholars operate. In education, however, such a core of excellence is missing. While individuals in academic institutions do have substantial expertise, a science community in the common sense is non-existent. Table 17 displays our assessment at a glance, with ‘++’ indicating a very strong local knowledge base, and ‘--’ a very weak local knowledge base. Again, we want to make the remark that the table is an oversimplification and should be seen only as a tool of illustration.

Table 17: Sectoral strength in terms of the local knowledge base

<table>
<thead>
<tr>
<th>Sector</th>
<th>South Africa</th>
<th>Tanzania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>++</td>
<td>-</td>
</tr>
<tr>
<td>Health</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Education</td>
<td>+</td>
<td>--</td>
</tr>
</tbody>
</table>

Source: Authors’ own illustration.