

Sustainable development planning in South Africa: a case of over-strategizing?

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Introduction

Cross-governmental planning and coordinating policies are among the main challenges for sustainable, low carbon development. Why is sustainable development planning so ineffective? How can governments plan and coordinate public policy interventions more effectively? What can we learn from theory and experience in other democracies about effective cross-governmental planning? Answering these questions is necessary to improve sustainable development planning processes. This paper reviews the literature on sustainable development planning and analyzes the South Africa's recent national planning efforts. Evidence shows that recent efforts emphasize repeated planning and strategizing with difficulties in the actual implementation. The reason for this is a combination of lack of information in policy to overcome uncertainties in the planning process and a lack of political commitment and equivalent institutions.

South Africa has a number of development plans and sectorial strategies for sustainable development. The first integrated framework for sustainable development emerged after the Johannesburg Summit in 2002. An independent National Planning Commission presented the latest development plan in 2011. Furthermore, the departments produce their own development plans and strategies. These efforts have had no major positive impacts on reducing poverty, emissions and inequality. Income inequality remains among the highest in the world. 39% of the population lives below the national income poverty line. South Africa's greenhouse gas emissions constitute around 1% of global emissions. For a developing country, South Africa's annual per capita emissions are high, at 9.2 tons per capita, whereas its GDP per capita is closer to developing countries with far lower emissions per capita. The emissions-intensity of the South African economy is one of the highest in the world.

This paper serves as a background document for a research project that informs sustainable development planning through the analysis of developmental impacts of mitigation action.

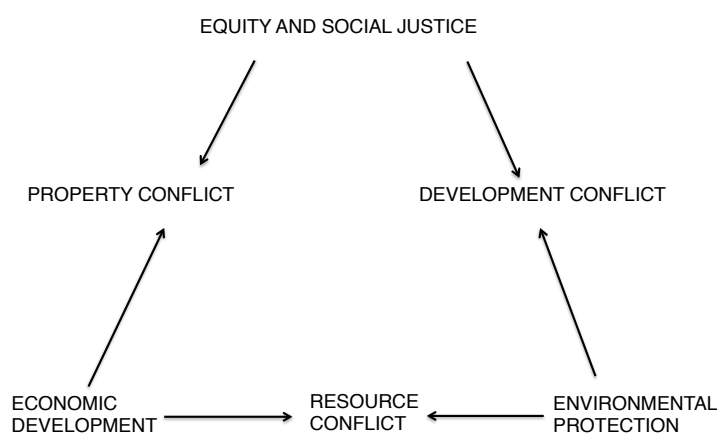
Background: Theories on sustainable development planning

The literature provides some answers to the research questions. Why is sustainable development planning so ineffective? How can governments plan and

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coordinate public policy interventions more effectively? What can we learn from theory and experience in other democracies about effective cross-governmental planning? These answers come mostly from the planning and political science literature. The groundwork has identified three main conflicts between the economic, social and environmental dimensions of sustainable development (WCED 1987; Campbell 1996). These three conflicts are a resource conflict between economic development and environmental protections, a development conflict between environmental protection and equity and social justice, as well as a property conflict between economic development and equity (Campbell 1996). The conceptualization of sustainable development has some impact on solving these conflicts (Campbell 1996; Connelly 2007).

Figure 1: Three main conflicts for sustainable development planning



Source: Campbell 1996

Early writers in the political sciences in the 1970s criticized the actual ambition of policy planning, as ‘planners cannot be consistent’ and ‘adapt to changing circumstances’ at the same time (Wildavsky 1973; Meadowcroft 1997). Another critique states that ‘one big integrated implemented solution for environmental decay’ or ‘an actually operative development plan for a developing country’ are simply not possible (Lindblom 1979, 521 cit in Meadowcroft 1997).

Later perspectives on ‘new governance’ change from the question of whether planning is possible to how planning can be done. The new governance perspective suggests that planning occurs in interactive policy networks, which are driven by ‘trust and cooperation’ (Rhodes 1996 cit in Meadowcroft, 1997) as well as hierarchy and conflict, and a certain network logic, which determines the interactions and bargains (Marin and Mayntz 1991; Mayntz 1997). This ratio does not always follow the logic of the market and determines the success of the negotiations. Network theories have not actually provided an explanation yet, why sustainable development strategies are inefficient. Yet, they are helpful to

identify actors and interests involved in the development conflicts. The third perspective contributes in a similar way. The approach suggests that advocacy coalitions negotiate policy solutions within given frameworks according to interests and beliefs. These processes trigger policy learning (Sabatier 1988; Weible, Sabatier et al. 2009) and lesson drawing (Rose 1991; Rose 2005) between the coalitions and countries. The negotiations between these coalitions determine the outcome in the planning process.

We can conclude that none of these theories suggest any concrete solutions of how to make sustainable development planning more efficient. They rather explain the 'open-ended' nature and problems of sustainable development planning, which 'is a complex and ambitious objective' (Meadowcroft 1997). Further literature provides some insights on the constraints to successful sustainable development planning, which are uncertainty, information and policy coordination.

UNCERTAINTY

Uncertainty appears as a key problem for sustainable development planning (Meadowcroft 1997; Jaenicke and Joergens 2000). Jaenicke and Joergens (2000) argue that strategic environmental planning can reduce uncertainties, in the prognosis of environmental changes, impacts of action and non-action, political uncertainty and innovation. The authors identify three empirical characteristics of sustainable development plans, which are usually only a first step for coherent sustainable development strategies. The three categories are firstly the 'accuracy and relevance of the [...] goals', secondly the 'degree of participation and integration of the planning process' and thirdly the 'extent of institutionalization of the plan' (Jaenicke and Joergens 2000). These three categories reoccur in other work in other words.

An evaluation of 30 sustainable development plans finds that it does not actually make a difference for the integration of sustainability principles whether they are explicitly mentioned in the plans. It rather matters whether the goals are well specified. The authors make the case that the planning stage needs to be carefully assessed along implementation and outcomes (Berke and Conroy 2000). Further literature emphasizes the role of indicators for developing quantifiable goals, which can be monitored and evaluated (Briassoulis 2010).

DEMOCRACY

The uncertainties and its open-ended nature make sustainable development planning a difficult task for both developed and developing societies. The literature identified most of the hurdles to sustainable development planning on the basis of empirical evidence from developed countries. Most of the evidence comes from the OECD countries (Meadowcroft 1997; Berke and Conroy 2000; Jaenicke and Joergens 2000; OECD 2009). OECD countries are mostly mature democracies with respective institutions. Many developing countries still lack those institutions, checks and balances and unconstrained flow of information.

Therefore, it is important to better understand sustainable development planning in developing democracies. An OECD study identifies political commitment, policy coordination mechanisms and monitoring systems as the key 'building blocks for policy coherence for development'. Commitment and coordination relate to the degree of participation and institutionalization. Again, stating clear policy goals, create formal inter-ministerial committees, and devote sufficient resources are key ingredients for successful planning and implementation (OECD 2009).

The argument that development comes first, and democracy later, prevailed for a long time in the literature. However, experiences show that democracy centered development strategies work better because they promote political checks and balances, responsiveness to citizen priorities, openness and information flow. Poverty often prevails in undemocratic political structures, without active citizenship, transparent institutions and participation (Siegle, Weinstein et al. 2004). Interestingly, researchers found that democracies have more rigorous environmental policies than autocratic regimes (Fredriksson and Wollscheid 2007). Does this mean that the sustainable development planning processes in democracies are more efficient? The literature on democracy and development suggests that this would be the case, given the better access to information and openness (Siegle, Weinstein et al. 2004), growth-enhancing policies and redistribution (Sahli and Bolle 2007).

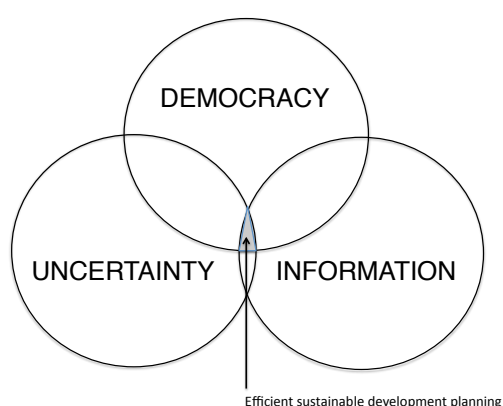
INFORMATION

One way to overcome the uncertainties in sustainable development planning is informed policy making. The research literature on evidence-based policy-making (EBP) shows that scientific research can increase the effectiveness in the policy making process. In environmental policy making, EBP has especially in increasing the quality of information as the basis for decision-making, involving stakeholders, increasing transparency and evaluation (Holmes and Clark 2008). EBP can also help to better inform policy transfer between countries, because it is better informed and policies are better evaluated (Legrand 2012). EBP has been criticized, especially in education policy (Sanderson 2003). It is certainly no silver bullet to overcome the uncertainties in sustainable development planning, as evidence needs to be interpreted carefully. However, research on the potential impacts of policy choices on the development goals, such as poverty and emissions reductions, can help to inform those choices, increase their legitimacy and transparency. Yet, the link between evidence and the policy process is not close enough, at least in the case of the UK (Holmes and Clark 2008).

Framework for analysis: Uncertainty, democracy and information

The framework presents uncertainty, democracy and information as the three main challenges to sustainable development planning from the research literature. The framework aims to contribute to a better understanding of the inefficiencies in the sustainable development planning process in order to overcome them.

Figure 2: Key challenges for efficient sustainable development planning



Source: own compilation

The relationship between these three challenges helps to define efficient sustainable development planning, which is a process embedded into coordinated democratic institutions and subject to political commitment. Free information flow and scientific evidence help to overcome the uncertainties in understanding the resource, development and ownership conflicts, help to define realistic and feasible development goals and make the implementation, monitoring and implementation of the plan easier.

Table 1: Overview of the characteristics to the key challenges in the research literature

UNCERTAINTY	DEMOCRACY	INFORMATION
Environmental changes and their impacts	Institutional structure for planning	Inform quantifiable and reachable goals
Impacts of policy intervention and non-intervention	Non-committal plans, lacking a strong basis in law	Understand possible impacts of intervention and non-intervention
Policy uncertainty	Institutionalized obligation of regular progress reports	Inform on trade offs and opportunity costs
Innovation	Mechanisms for evaluating and reformulating the proposed targets and measures	Support priority setting
Open-ended process	Lack of recurrent process of policy learning, Interdepartmental policy coordination	the scientific analysis of environmental changes has great weight in the plans
Overall outcome	Advanced environmental policy plans go hand in hand with an increase in diagnostic capacities	Free information flow and access in democracies
Implementation	Maintain responsibility over a longer period of time	Monitoring and evaluation, support implementation

Source: own compilation based on Jaenicke and Joergens (2000), OECD (2009), Holmes (2008)

Sustainable Development Planning in a democratic South Africa

Sustainable development planning is a very recent exercise in South Africa, which has been strongly internationally influenced. In 1992, during the Rio Summit, South Africa was not yet a member of the United Nations, again. The negotiations for the transition from an apartheid driven minority regime to democratic rule were still underway at that time. Since the first democratic elections in 1994, the South African government undertook two main cross-governmental planning exercises, which supposedly combined the sectorial planning efforts. The first is the National Framework for Sustainable Development; the second is the National Development Plan, which will be analyzed in this section according to the framework below.

DEMOCRACY, INSTITUTIONS AND POLICY UNCERTAINTY

After the transition, the new South African government caught up quickly on the international stages. Ten years after Rio's Earth Summit that introduced the concept into the national agendas, South Africa hosted the anniversary summit in Johannesburg in 2002. The commitments at the World Summit on Sustainable Development (WSSD) in Johannesburg were full of good intentions. The Johannesburg Declaration restated the government's commitment to sustainable development. The Johannesburg Plan of Implementation compiles a long list that repeated old targets and added 37 new targets and time frames. The range of topics is diverse and reaches from halving the number of people without access to sanitation by 2015 to a global science and technology agenda.

Furthermore, nations committed to themselves to develop national sustainable development strategies besides the Agenda 21 by 2005 in Paragraph 162 of the JPOI:

"States should take immediate steps to make progress in the formulation and elaboration of national strategies for sustainable development and begin their implementation by 2005."

This commitment became a challenging task for the Department of Environmental Affairs and Tourism (DEAT) at the time. The department led the efforts to develop this cross-governmental strategy. Yet, the department was small in terms of budget and staff and lacked the necessary power for such an umbrella function. The weak institutional setup of the strategy jeopardized the success for implementation from the beginning of the planning process. The process started in 2003. In 2005, the first draft of a 'National Framework for Sustainable Development' came out for public comment. In 2008, the NFSD past the Parliament and became an official government document. 'People, Planet and Prosperity' titles the National Framework for Sustainable Development (NFSD). The process carried on with a new draft in 2010 that is supposed to set targets until 2014. Until 2009, the NFSD was the only explicit sustainable development strategy. It received the careful name 'framework' rather than 'development plan'. The NFSD built a framework for other macroeconomic development plans and

never received the priority that it deserved as a planning tool. The implementation strategy and action plan followed in 2010.

The NFSD resulted from an international initiative, as opposed to a national priority. Institutionally, it was based in a minor, second range Department, Environmental Affairs and Tourism, which has no enforcement power over the other ministries. Implementation became impossible without a strong political commitment from the presidency, despite the DEAT's big efforts in developing the strategy.

National planning regained priority with the new administration in 2009. President Zuma reemphasized the importance of national planning asking to think about 'the story' of how South Africa overcame poverty, mass unemployment and inequality. The former Minister of Finance, Trevor Manuel, received the mandate to set up a national planning commission (NPC) to create a long-term development plan for South Africa. The NPC received the status of a ministry, and was set up as a part of the presidency. Twenty-four experts from different fields became commissioners. Their task was to develop a vision in their field until 2030, with short-term, mid-term and long-term objectives and actions. The commission presented the first draft of National Development Plan for South Africa for public comment in November 2011 and finalized it in August 2012.

The institutional setup of the planning commission as a ministry under the presidency is an improvement compared to the NFSD, because it acts at a higher level independently from a single department. Policy uncertainties derive from the fact that there is no legislation, which makes the plan a valid public policy. The plan will probably never turned into an act, a bill, a green or a white paper. Absence of clear political commitment makes the implementation of the plan uncertain. A further indication for lacking political commitment is that most of the funds for the planning process came from the British development aid, rather than a national budget.

Further uncertainties derive from the directorship of the semi-independent commission. The commission consists mostly of independent, non- governmental experts, but it is headed two political heavyweights in the ANC, Trevor Manuel and Cyril Ramaphosa. Both stand for political fractions within the party. The planning commission is very much associated mostly with Manuel, which increases the political uncertainty of the commission depending on the future of his political career.

DEVELOPMENT GOALS AND POLICY PROBLEMS

Many South Africa's sustainable, low-carbon development goals hide in diverse sectorial plans. The South African government has formulated these targets implicitly in its recent development plan and its National Response White Paper on Climate Change. In 2009, President Zuma announced to 'implement mitigations actions that will collectively result in a 34% and a 42% deviation below its „Business As Usual“ emissions growth trajectory by 2020 and 2025 respectively.' Yet, this outcome depends on the extent of financial, capacity-

building, technology development and technology transfer support to developing countries in accordance with Article 4.7 of the UNFCCC.¹ Mitigation actions have become key to advance emissions reductions. The White Paper restated these numbers, which Cabinet approved. Mitigation actions are the main vehicle to achieve the emissions reduction, however, they are not clearly defined yet. As in most developing countries, development comes first on the political agenda in South Africa. Therefore, mitigation actions need to be in line with the development priorities, and cannot tackle poverty and inequality just as a desirable 'co-benefit'.

Similarly, development targets are clearly quantified, but unclear how they will be achieved yet. The National Planning Commission prioritized to reduce poverty and inequalities as the main development objective in its national development plan. By 2030, the number of 39% of the population living below the national poverty line (418 ZAR per month/ 2009 prices) should be reduced to 0%. Income inequality (as measured in GINI) should decrease from 0.7 to 0.6 by 2030 (NPC 2011, p.3). Yet, it is not clear how these targets will be achieved. The targets for poverty and inequality reduction in the national development plan are not national policy (yet). The implementation strategy plan in 2010 of the NFSD states the main problems that South Africa faces: job losses through the global economic crisis, rising emissions, water scarcity, rising food prices, rising oil prices globally and a domestic electricity crisis.

Implicit development targets appear in other policy plans: The new growth path (NGP), the industrial policy action plan (IPAP), the integrated resource plan (IRP) underpinned by a 10-year plan for scientific and technological development. The NGP and the IPAP plans acknowledge poverty and inequality as the main challenges that need to be overcome. The targets, however, do not quantify reductions in poverty and inequality. Quantifiable targets refer to unemployment rates and new jobs. The NGP set a target to create five million new jobs, to reduce unemployment from 25% percent (in 2010) to 15% in 2020. The plan targets 300 000 jobs to explicitly emerge in the 'green economy' with 80 000 in manufacturing and the rest in construction and maintenance of 'environmentally friendly infrastructure'. The NGP estimates the potential for job creation in this sector with 400 000 until 2030 (RSA 2010b). These green jobs are supposed to emerge around natural resource management, renewable energy construction and manufacturing. The plan underpins this objective with a comprehensive support for renewable energy and energy efficiency. The main target is to create 5 million new jobs by 2020 to reduce unemployment from 25% to 15%. The plan geared up to 2011, the designated year of job creation under the Zuma administration.

¹ This reduction is calculated in the logic that emissions "peak, plateau and decline". The emissions supposedly peak between 2020 and 2025 in a range between 398 megatons and 583 – 614 megatons. More details on the logic of the fictional reductions can be found in the document DEA (2011) Defining South Africa's Peak, Plateau and Decline Greenhouse Gas Emissions Trajectory. The emissions reductions targets were first announced in 2009 by President Zuma and restated in the National Climate Change Response White Paper in 2011.

In the NGP, the mining sector plays an important role for job creation. The mining sector shrank by 1% per year during the commodity boom between 2001 and 2008, whereas in other mining driven export countries these sectors grew about 5%. In South Africa, these numbers caused heated debates between mining industry and the government about the causes. Mining firms representatives argue that it is a consequence of governmental intervention, whereas government sees it as their duty to structurally support these businesses.

The mining sector implies key development, property and resource conflicts. The exploitation of coal and metals fuel the export economy as well as most of the national electricity supply. Strong trade unions, COSATU and NUMSA, protect the jobs in the mining sectors and bring forth many successful ANC politicians. The strong historical bond between the ANC, the unions and the communist party is very much centered around the mining sector and its voting workers, although it is intrinsically driven by the property conflicts between social equity and economic development.

A growing mining industry generates jobs, yet does not contribute to reducing emissions and protecting water resources. The resource conflict unfolds in the coal dependency of the electricity sector, which demands a growing mining sector. Therefore, the government aims at exploring new coalmines in the Waterberg area, as the resources in the central mining fields are fading. These endeavors require major infrastructural investments, mostly on railways, roads and ports. These large-scale public works again create jobs, especially for lower skilled labor. These jobs are not necessarily sustainable. Once the main road works are done, only a small part remains employed in maintenance and administration.

Different studies provide different impacts. The ILO claims that the community based work program has created 140 000 jobs of which 19 000 were sustainable with a financial input of 85 million rand. There is a problem with low-skilled labor-intensive jobs for public works, because government can't legitimately build underpaid slave labor programs. Training education and prospective higher skilled employment needs to be integrated in the public works programs. Monitoring and evaluation has so far not been an integral part of the NPWP.

South Africa has experiences with big public infrastructure projects that were supposed to create jobs since the 1980s. The public works programs between 1980 and 1994 were unsuccessful according to the analysts because they created little sustainable employment, were not cost-efficient and did not deliver long term results (McChuetcheon 2010, Maasdorp et al. 1994). The National Public Works program became a key component of the RDP in 1995. The main idea was to reduce unemployment through 'productive and labor intensive jobs', education and training, community empowerment, sustainability and planning, monitoring and evaluation. 15 years later, large public infrastructural works, again, feature high on the political agenda and in the recent development plan.

In his state of the union speech in February 2012, President Zuma declared the year 2012 as the year of infrastructure delivery. Last year was the year for job creation. The unemployment rate has dropped in the first quarter in 2012. Zuma interpreted this trend as an immediate outcome of his political efforts throughout 2011. Zuma identified 'the triple challenge of unemployment, poverty and inequality persists, despite the progress made. Africans, women and the youth continue to suffer most from this challenge' (Zuma, State of the Nation Speech 2012).

The Industrial Action Plan (RSA 2010a) suggests concrete intervention for sustainable, low carbon development. These interventions suggest increases in the content of local manufacturing in Solar Water Heating (SWH), and the renewable energy procurement program for independent power producers (IPPPP). These industrial policy programs target to increase local manufacturing around solar and wind technology within South Africa.

Furthermore, the plan suggests stimulating demand for biofuels through mandatory biodiesel and bioethanol blending at 5% and 2%. The Department of Energy plans to finalize this intervention for approval by the end of 2012. The Department made plans to set up a biofuel plant, which is controversial, because there are almost no skills in this area. The Department of Trade and Industry spends two third of its annual budget on incentives. The budget grew almost doubled between 2005 and 2012 from 4 to 7,2 bn ZAR.²

The Department of Science and Technology support innovation and technological development. South African Science and Technology policy builds on a quite robust framework with a National White Paper (1996), a Research and Development Strategy (2002) and a 10 Year Innovation Plan (2007). The Plan defined five 'grand challenges' for STI policy to engage between 2008- 2018. Two of these challenges were energy and global change, including climate change.

The Department of Energy has engaged in a process of energy planning with the Integrated Resource Plan (IRP) that comprises most of South Africa's energy technology choices for electricity generation. The plan is probably the most systematic sectorial approach to long term planning. The plan set out with a scenario for South Africa's energy mix until 2030 that was subject of a consultation process. The main revisions from the consultation process were to include solar PV technologies and to limit the construction of coal power plants to 2020. The objections to the nuclear plants did not find consideration. In addition to all existing and committed power plants (including 10 GW committed coal), the plan includes 9,6 GW of nuclear; 6,3 GW of coal; 17,8 GW of renewables; and 8,9 GW of other generation sources (RSA 2011b). According to the plan, South Africa's energy future will consist of a mix of nuclear and renewable energy with some new coal capacity. The IRP suggests installing 1000 MW renewable energy

² DTI (2011): Medium Term Budget Framework
<http://www.pmg.org.za/docs/2010/100310dtipres2.pdf>

capacity per annum or 17,8 GW by 2030.³ However, the plan is supposedly a ‘living plan’ that will continuously be subject to consultation and revision. Other sectors lack an integrated planning process, although it would be useful for the planning the transition towards low carbon development patterns, especially in transport.

In current energy planning, South Africa’s energy future comprises coal, renewable energy and nuclear power. The integrated resource plan does not reveal details on the implementation and finance of the suggested energy mix. This uncertainty on the implementation side features in the other policy plans, too. In sum, the goals and targets are quite clearly formulated in each of the policy domains. However, the route to achieving these goals has not been concretely laid out.

Table 2: Overview of South Africa’s ‘low carbon development goals’

	Theme	Numeric target	Source
Socio-economic development	Poverty	Reduce poverty from 39% to 0% of the population living below the national poverty line (418 ZAR per month/ 2009 prices)	National Development Plan (2011)
	Inequality	Income inequality (as measured in Gini) should decrease from 0.7 to 0.6 by 2030	National Development Plan (2011)
	Jobs	Reduce unemployment from 25% percent (in 2010) to 15% in 2020. Create 300 000 jobs in the ‘green economy’ with 80 000 in manufacturing and the rest in construction and infrastructural. 400 000 until 2030.	New Growth Path (2010)
Mitigation & energy security	Emissions reductions	Reduce emission through mitigation actions by 34% by 2020, 42% by 2025*	National Climate Change Response White Paper (2011)
	Renewable Energy	10 000 GWh (0.8 Mtoe) renewable energy contribution to final energy consumption by 2013, to be produced mainly from biomass, wind, solar and small-scale hydro	White Paper on Renewable Energy (2003)
	Overall Energy Mix for Electricity	9,6 GW of nuclear; 16,3 GW of coal; 17,8 GW of renewables; and 8,9 GW other by 2030	Integrated Resource Plan (2011)

Source: own compilation

Renewable energy is an integral part of the transition to a low carbon, climate resilient society in the plan (NPC 2012). The plan suggests developing exportable technologies and skills to deliver energy, food and water security by 2030. Currently, the implementation of existing renewable energy deployment

³ A Renewables Initiative (SARI) supposedly supports the deployment and scaling up of renewables a part of the green economy program of DTI’s IPAP. The program is still in the design phase.

programs lacks behind. The Renewable Energy White Paper's (DME 2003) goal of installing 10 000 GWH of renewable energy by 2013 will likely fail. The deployment relied largely on the Renewable Energy Feed in Tariff was found unconstitutional by the National Treasury, because according to the Treasury's interpretation it did not comply with the logic of competition. The REIPPPP replaced the feed-in tariff. The policy process led to delays in the implementation, pressure to lower the price and increased risk for the power producers.⁴

INFORMATION

The planning commission integrated most of the strategies in the plan. For the chapters on energy infrastructure and low carbon development, the commission requested six research papers. These papers were mostly on policy alignment, the conflict between exploring the minerals while reducing energy and carbon intensity, mitigation policy and infrastructure expenditure. These papers are all on topical solutions the planning commission had to address and some of them are reflected in the actual plan.

So far, no further research has been commissioned, to inform the quantifiable policy goals, to inform each of the policy options in terms of their costs and development contribution and on monitoring progress to reaching the development goals.

COHERENCE AND COORDINATION

How do the recent development plans relate to each other and to other sectorial plans? Conceptually, there are two opposing development models in the different plans. Whereas the IPAP and the 10 year innovation plan envisage a skills and innovation based transition to a knowledge economy, the energy planning in the NDP suggests a traditional infrastructural driven approach to economic development through exploitation of natural resources, especially coal and its export. These two opposing development concepts clash within the plan between chapters 4, 5 and 9.

The main focus on infrastructure building through public works brings success and failure of previous public works programs to mind that have not contributed to reduce unemployment, poverty and inequality. Infrastructure development links up closely to the energy future in South Africa. The national development plan treats energy mostly as an infrastructural issue. The chapter on infrastructure presents concrete energy targets, but no real solutions. In this chapter the plan states that coal will remain the main energy source for South Africa for at least the next twenty years. The estimates of the future energy demand is 29 000 MW by 2030, the new two coal power plants are covering about 4 800 MW, which leaves a big gap in electricity supply if it remains only coal

⁴ Parts of this sections derive from Rennkamp, B. and A. Boyd (2012). "Technological capability and transfer for achieving South Africa's low carbon development goals." Draft paper submitted to Climate Policy.

based, plans about rail capacity how to connect the diminishing coal fields in the central basin and the new fields in the Waterberg, to Walvis Bay in Namibia. The exploitation of new coal reserves requires big infrastructural road and rail constructions that again are supposed to create new jobs in the short-term.

There are still question marks on the finance of capital for the six nuclear power stations that the South African envisages to install by 2030. The current cost estimates vary between 300 billion and 1,4 trillion ZAR, which are unlikely to come from commercial banks for such long time frames. The government will have to take on large part of the risk and financial burdens according to the very limited publicly available information on this megaproject.

These question marks translate to the implementation of the whole energy plan. The treasury's budget from tax return comprises about 700 billion ZAR per annum. The financial burden of the so-called 'nuclear fleet' will certainly compromise in the roll-out of the renewable energy strategy and the incentives for technological development in this area. Nuclear investment makes renewable energy more expensive. If the government cannot assure the finance on the market or public opposes it, the fleet might not become materialize and more funds can flow into decentralized energy systems.

In terms of planning a low carbon future, there is more need for coordination and evidence-based, transparent decision-making considering the trade offs and costs between the different energy choices at the highest political levels. The national development plan has provided valuable inputs on trade-offs, pro and cons, partially in weighing options for fuel productions. This could be explored more substantially for other energy options with an estimation of how each of them can contribute to the overall development goals.

Conclusion

Creating a planning commission and developing a national plan has been certainly a big step into the right direction towards long term planning. Yet, South Africa is far away from efficient sustainable development planning. The analysis showed that sustainable, low carbon development planning falls short in overcoming uncertainties through information, evidence-based policymaking, institutional setup and political commitment.

The development plan spells out clearly quantified overall goals. The aims are to reduce poverty (measured by % of population with in income below 418 ZAR per person) from 39% to 0%, reduce inequalities from 0.7 to 0.6 as measured by the GINI index. Reaching these goals means overcoming severe resource, development and property conflicts. Reaching these goals means making choices. Making choices means that there will be winners and losers. The goals propose that the current losers, the poor population, should win. The plan remains vague about who is going to lose. Making choices, which might compromise the advantage of the current winners requires strong political commitment and

decision-making capacity. The political commitment to actually make these choices is questionable.

The institutional set up reflects the compromised political commitment. The plan is a consultative plan, but no official public policy. The goals are not legally binding. The plan is unlikely to become a green or a white paper, as there is no discussion on changing its legal status. The absence of a clear institutional framework leads to the resources for implementation. The commission received initial support from the British government. So far, there are no substantial foreign or national resources made available for the implementation. Allocating national resources reflects political commitment, which has not happened yet.

Information has not been used strategically used to overcome the uncertainties, so it is quite likely that the national development just becomes another plan like the NSFD, which remains on paper, but without sufficient political commitment and institutional weight for implementation. Even as a pure think piece or consultative plan, the NDP lacks a solid analysis of the costs and benefits between different energy options. The plan provides recommendations, but it does not explain why the gas and coal options would be the preferred options over alternative energy sources. The future of the plan and its implementation is unclear. There is no commitment for an implementation. The plan sums up to a 'wish list' without informing feasibility checks of the policy goals or estimating budgets and opportunity costs of each option.

Which option has the most beneficial poverty reducing impacts? Research can help to set these priorities and support the government in making legitimate and transparent decisions. A solid scientific basis for each of the options can help so that decision-making and implementing becomes as just easy as planning. It will be crucial for the government to understand how each of the options can contribute to the overall development goals of reducing poverty and inequality. It will be necessary to understand clearly the potential for job creation, inclusion, and energy security of each of the option and whether we can afford to build new nuclear plants, while creating a new infrastructure for coal mining and exploitation of new coal fields, and subsidizing the renewable energy program. Some research papers have informed the commission. These were background papers on specific issues, but there was no integrated approach to commission research to understanding each of the energy policy choices and their developmental impacts.

Political uncertainty threatens the sustainability of the commission. It remains unclear, whether it will continue after the elections next year as it is very much personally bound to Trevor Manuel. This institutional embedding is quite unique. The group of experts, very loosely bound to the Presidency and ministerial level through Manuel, but is not to directly set up under the president.

The coordination with other groups and plans happened through numerous meetings and round tables. Other departments were uncertain how to respond to the plan having there own sectorial plans already in place. The

question to ask each of the Departments would be to spell out how each of their strategies contributes to the overall goal of poverty and inequality reduction.

The goals are well quantified. Yet, it would be useful to find out and quantify to what extent each of the sectorial plans can contribute to each of the poverty and inequality targets. The plan makes no reference to the previous framework for sustainable development.

We can conclude that South Africa does not lack development plans and well-quantified development goals. The national plan has laid important foundations in this directions, along with the previous but neglected sustainable development framework and abundant sectorial plans. Yet, the risk for the national development plan to marginalize is very high, because of the missing political commitment and multiple policy uncertainties. The big bottleneck is the implementation and a commitment to carry the work further from the planning stage. Next it will be necessary to narrow down how the targets can be achieved and how the resource and property conflicts can be solved. Now, it will be necessary for researchers to inform the policy choices and their impacts on poverty and inequality. It will be necessary for each department to state how their sectorial plans contribute to the development goals. It will be necessary for researchers to inform what it means to eradicate poverty for each of the current winning coalitions. It will be necessary for citizens to understand their own contribution and to demand action. It will be necessary for the government to commit to the goals and to make urgent decisions, in favor of the poor. To advance sustainable, low carbon development, South African society needs these actions and certainly no other plan.

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