



Mitigation Action Plans & Scenarios

WORKING PAPER

## Implementing climate change mitigation: a journey into the unknown

We are “...clinging to some long discredited assumptions about implementation, including the often implicit belief that the process is governmentally ‘controlled’ at the top and effective implementation may simply be a matter of getting the administrative levers right.” (Najam 1995: 5)

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# Implementing climate change mitigation: a journey into the unknown

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## PURPOSE OF PAPER

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This paper seeks to provide insights and recommendations on policy-development-and-implementation for practitioners in the field of climate change mitigation. We introduce this composite term at the start of the paper to define a core finding of the research on implementation<sup>1</sup>: the inter-relatedness, interactive top-down and bottom-up, mixed-up, messy and complex nature of policy development and implementation. We will use this term throughout the paper in an attempt to emphasise this nature.

The mitigation analyses and scenarios emerging from evidence-building exercises such as the MAPS Programme have shown that there are technically and economically feasible solutions to contribute to averting dangerous climate change in a context of development. By sharing our insights and findings about implementation, and interrogating the current assumption of ‘handing over’ the mitigation policies/ actions/ options that have been developed in mitigation analysis and scenario processes for implementation, this paper hopes to provide a basis on which to consider the next steps of accelerating progress towards the implementation of the large scale of *mitigation options on the ground that achieve the required levels of substantial material impact*. Specifically, this paper explores possible answers to the question of how to achieve, and accelerate actual emission reductions by further developing and deploying the substantial knowledge, networks and political will generated by MAPS in Chile, Peru, Colombia, Brazil and South Africa over the past five years. However, the insights apply equally to any mitigation practitioner wanting to work more effectively to achieve performance in mitigation policy-development-and-implementation, or to those interested in the wide range of areas related to policy-development-and-implementation.

Practical insights from an initial scan of the extensive literature to be found on implementation in general, and in particular; from two recent MAPS papers on mitigation implementation, five case studies on South African mitigation implementation examples conducted specifically for this paper and two additional related studies, one on the South Africa Long Term Mitigation Scenarios (LTMS) process and the other on the development of a Sectoral Mitigation Action Plan by the Government of Colombia, have been used to inform this paper<sup>2</sup>. The research on implemented projects in South Africa and Colombia is aimed at better understanding the complex processes, relationships, activities and institutions involved in mitigation ‘policy-development-and-implementation’.

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<sup>1</sup> The term ‘implementation’ in the context of policy-development-and-implementation is itself problematic, especially if a separate ‘implementation stage’ of a policy-development-and-implementation Policy Cycle is argued for, because the idea of Policy Cycle itself is problematic. However, these terms are used in the literature and so we retain their use even as we reach core findings in this paper pointing to their problematic nature.

<sup>2</sup> These research studies can be found at <http://www.mapsprogramme.org/category/themes/implementation/>

## BACKGROUND AND OVERVIEW

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This paper is structured as follows. It starts with a contextual background, including an overview of the research work that underpins the paper. It then proceeds to provide a digest of research on implementation that is of particular relevance to mitigation practitioners. Finally, the paper makes explicit the applicability of these insights for the challenge of accelerating and achieving implementation at scale, particularly in the context of Chile, Colombia, Peru, Brazil and South Africa, as examples of developing countries with advanced information bases and significant achievements in mitigation policy development.

### MAPS and the mitigation community

Greenhouse Gas (GHG) mitigation policy-development-and-implementation in developing countries has a short history, more or less 10 years old. In spite of the existence of high-level mitigation policy frameworks, and relatively successful development of project-level mitigation activities such as the Clean Development Mechanism and emerging Nationally Appropriate Mitigation Actions, in some countries (for example in South Africa, Chile, Colombia and Peru) the development of detailed implementation programmes incorporating mitigation has been rare. Virtually no clearly discernible implementation at scale has occurred as a direct consequence<sup>3</sup> of mitigation policy.

The South African LTMS process, conducted from 2005-2007, was framed as a technical scenario building and analysis process (Winkler, 2007). It was subsequently used as the overall quantitative framing of mitigation goals for South African mitigation policy: the South African 2008 Copenhagen Pledge and the subsequent 2011 Climate Change Response White Paper (DEA, 2011), as well as South Africa's Intended Nationally Determined Contribution (INDC) (2015). Based on the LTMS numbers, an emissions trajectory until 2050 called the 'Peak Plateau and Decline' trajectory was taken as a basis for a national emissions trajectory by the Climate Change Response White Paper - essentially establishing a national emissions budget. This national trajectory was to be cascaded down to emissions budgets for sectors and entities within three years, with the large emitting entities required to 'submit mitigation plans that set out how they intend to achieve the desired emission reduction outcomes.' (DEA 2011: 27). The White Paper also states that within two years an 'optimal mix of measures will be developed' (DEA 2011: 27). However, four years after its publication these budgets for sectors and entities have yet to be allocated, and the mitigation plans and optimal mix of measures have not been forthcoming. A gap between the policy and implementation is becoming apparent. With the benefit of hindsight, and informed by the current research work into the challenges of implementation, the reasons behind this gap are becoming more understandable.

The MAPS Programme was inspired by the South African LTMS experience, principles and practice. This Programme employed similar processes involving a wide range of stakeholders within a particular authorizing environment. Implemented in Chile, Colombia, Brazil and Peru, it has resulted in a set of economic scenarios that include mitigation options that have been analysed at aggregated technology and sector level together with their macro-economic implications. This base has been used to inform a largely top-down<sup>4</sup> set of national emissions goals and national sector level plans; for example, the Intended Nationally Determined Contributions (INDC) under the international climate negotiations.

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<sup>3</sup> There are a few possible notable exceptions such as the South African Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), although it is debatable whether this was an example of mitigation policy driving implementation effort or whether the policy created the conditions and the primary drivers came from outside the mitigation area. Whichever the case, it is still an exception: the rule being that the large scale of required mitigation impacts on the ground has yet to occur.

<sup>4</sup> By 'top-down' we refer to its conventional usage in the general literature on implementation: the legislative/ policy/ executive function driving policy-development-and-implementation. This is as opposed to the 'bottom-up' approach in which the operational level drives the making of significant contributions to policy-development-and-implementation.

Some ‘implementability’<sup>5</sup> criteria have been taken into account when packaging the scenarios coming out of MAPS. To date this has relied primarily on expert judgments of feasibility, often biased towards historical trends. Still, a common challenge has been the lack of a robust or analytical process for the assessment of implementability, especially those aspects of policy-development-and-implementation involving institutional and operational considerations.

This MAPS Programme methodology belongs to a worldview which presupposes that well-researched evidence at the policy or strategic level will direct action in a linear, logical, step-wise fashion with reasoned thinking as its foundation. Thus, the high-level, top-down results also belong to this rational world and the mitigation community’s methods and practices and outlook has mainly been forged within this worldview<sup>6</sup>. However research into implementation<sup>7</sup> has shown that the world of implementation is rarely, if ever, driven *solely* by rational evidence and linear progression. There is thus a profound difference between the fundamental assumptions of, on the one hand, mitigation analysis and scenario building cascading down to actions and, on the other hand, the dynamics of the real world of government line-departments, GHG emitters - big and small, all other interested and affected parties and the highly political nature of policy-development-and-implementation.

This is not to say that the various knowledge sets developed in the MAPS processes are not necessary components in the process of achieving the large-scale mitigation required to avoid dangerous climate change. Given the historical development of climate science and climate policy, their development has been a necessary and logical step. Moreover, MAPS-type processes, if well designed, can deliver a set of outcomes that well exceed the beneficial impacts of the actual analytical results, including new capacity, new resources, new communities of practice, new relationships, mind-sets and buy-in. In fact, the explicit design of MAPS processes is that

*“...since change in a system is driven by people, so people need to be influenced, or moved, to act. This assumes that a critical mass of actors in a system start a process of change that builds a constant impetus towards the impact sought. The MAPS theory of change has presupposed that in order to start acting, actors across society need to be convinced that they should act in this particular way, pushing against prevailing practices and vested interests. This conviction is driven by internalised knowledge, on the one hand, and more “emotional” or value driven motivators, on the other. This means that not only must actors be convinced by the data, but they also need to “feel” ownership for the case; to defend the actions required, especially in the face of opposition in the form of vested interests.” (Boulle et al., 2015: 7).*

## MAPS implementation research

The MAPS community has been concerned with the translation of the analytical results from the MAPS processes into workable policies and implementation programmes; the next steps of securing the required level of involvement and commitment from those outside of the mitigation policy-development-and-implementation arena and ultimately emission reductions on the ground. The implementation research work undertaken and described here was intended to help address this issue.

One of the main obstacles to research on climate change mitigation implementation has been a lack of examples of implementation that have been carried out as a direct result of mitigation policies and goals. At the start of the MAPS

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<sup>5</sup>We mark ‘implementability’ with quotes here to indicate that although we use the word, the term in the context of policy-development-and-implementation, is of questionable value, because it implies an acceptance of the Policy Stages model. A key finding of the current research is that this model has not been empirically validated and hence ‘implementability’, understood as being a part of a separate “Policy Formulation” stage would not make sense.

<sup>6</sup>See Emily Tyler’s Paper ‘Reflecting on climate mitigation policy in a development context: how we do what we do’ for more reflection on this topic. [http://www.mapsprogramme.org/wp-content/uploads/Paper\\_reflecting-on-climate-mitigation-policy-in-a-dev-context.pdf](http://www.mapsprogramme.org/wp-content/uploads/Paper_reflecting-on-climate-mitigation-policy-in-a-dev-context.pdf)

<sup>7</sup>Based on extensive empirical research since the 1970’s (Najam, 1995).

research on implementation, Tyler et al., in a 2011 paper investigating South African Mitigation Actions, found that South Africa is good at identifying, analysing and designing activities<sup>8</sup> to mitigate emissions, but is 'less good at implementation' (Tyler et al., 2011: 3). It found that the two main areas of risk in mitigating emissions are 'counteracting vested interests and availability of finance'. The paper further suggests seven variables that might impact implementation<sup>9</sup>. These variables are a subset of Najam's 5C Protocol<sup>10</sup> and while we note the usefulness of the seven variables, the subsequent MAPS implementation research has chosen to work with Najam's 5C Protocol.

A second paper from the MAPS community on implementation involved case studies from South Africa, Brazil, Chile, Colombia and Peru and applied the seven variables suggested in the Tyler et al. (2011) paper, drawing on MAPS country studies and through interviews with MAPS researchers in those countries (Boyd & Coetzee, 2013). The resultant analysis proposes that mitigation actions are more likely to be implemented if a range of possible impediments or risks to implementation are considered early in the planning and selection stages. The interviews and analysis do not draw on the implementation literature, arguing that explicit literature on mitigation implementation could not be found. The study does however contain a concluding section exploring the literature on general public policy implementation to reveal that the variables identified in the Tyler et al. (2011) paper show a marked degree of alignment with the generic public policy research focused on implementation, as encapsulated in Najam's 5C Protocol.

Both of these studies hold out for prospective research to find factors that will allow assessment of 'implementability' in advance of implementation. Boyd and Coetzee (2013) especially introduce the idea of implementation as being highly complex and argue that there is a need for descriptive work to deepen understanding of implementation. One of their important findings about the implementation variables is that it is unclear how these variables should be considered in policy and implementation design processes. Another key idea is their implicit adoption of the idea of the policy stages model of policy-development-and-implementation: they state that 'mitigation actions require a sequence of stages from identification, promulgation, planning and financing all the way through to operationalization' (Boyd & Coetzee 2013, p. 5). These key findings together with their implementation variables are key foundations to the subsequent research into implementation that informs the current paper.

By 2014 there had been a few cases in South Africa of projects that have clear material mitigation potential or actual mitigation outcomes and these had progressed to a stage that provided an opportunity for deeper investigation. An extended implementation research team was convened within the MAPS Programme with an initial main objective of studying implementability through a number of case studies. The team wanted to explore the research question: what is the "evidence base" needed to assess and enable implementation? (Trollip, 2014: 2). In so doing there was a hope that an assessment could be made in advance (i.e., during feasibility or design stage) of the *likelihood* of a mitigation option being implemented, thereby providing the opportunity to allow for changes to a project *prior* to implementation that could assist with it moving into implementation. Specifically, the aim was to provide tools or methods of analysis, or to identify variables that could be applied to MAPS' outputs or could further develop these outputs, to assist with their moving to implementation.

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<sup>8</sup> 'Activities' would probably be more accurately phrased as 'techno-economic mitigation options'.

<sup>9</sup> These 'variables' are mandate; institutional capacity; supportive policy, regulatory and planning context; alignment with national priorities; a financial structure; local technical capacity to design the mitigation action; and, capacity to technically operationalize the mitigation action.

<sup>10</sup> See next section on methodology for details on Najam's 5C protocol of critical explanatory variables used for describing implementation.

In this initial phase there was a distinction between policy-formulation activity, and implementation activity, with the idea that during the policy-formulation activity 'implementability' could be assessed. However, the implementation literature that was accessed during the consequent research indicates that the assumption of being able to assess 'implementability' at the policy formulation state was overly ambitious. Despite this, even though clear criteria for assessing 'implementability' in advance were not found, and according to the literature probably cannot be found, the implementation literature revealed much of use to improve knowledge of policy-development-and-implementation, both reflectively and potentially in on going policy-development-and-implementation. This has been corroborated by the case studies.



## METHODOLOGY

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The first task of the research team was to review the existing literature on implementation in order to set up a common research framework for five case studies on implemented projects in South Africa. The case studies were chosen to include government and private sector actors and to be varied in scale and success rate. The leaders of the case study research, being from the mitigation community, were generally more experienced and orientated towards research and analytical expertise in economics, energy systems and practical energy policy analysis, rather than in public policy theory, public administration or management and change theory, although two of the case study researchers had actual experience of playing roles in managing the implementation projects that were chosen as case studies. Because of this external consultants with more experience in carrying out implementation or studying public policy implementation were included in the research activity: either directly or in an advisory and review capacity.

The team quickly identified an extensive body of literature on implementation, starting in the 1970s. Despite a significant effort put into reviewing this work over a few months, a common research framework and/ or methodology for the varying case studies could not be developed within the timeframe allocated for this phase of the project, and the individual case study fieldwork proceeded each with its own chosen framework. This did not necessarily have a negative impact. In fact there were benefits to the research because the variety of frameworks and methodologies suited the wide range of case studies. In addition the varied nature of the results has led to a more comprehensive range of insights, both related to implementation and in research frameworks and methods. However, the team did identify a particularly useful reference to provide a framework for considering implementation, namely the Najam 5C Protocol. The 5C Protocol involves the use of a set of 5 clusters of critical variables, as Najam calls them (Najam 1995:30). These have been used; more so in some case studies than in others, as a tool for describing and understanding policy-development-and-implementation. In addition Najam's 1995 paper is extensively used in the present paper in drawing insights and building recommendations.

### **The 5C Protocol - a structured set of clusters of variables used to describe implementation**

Najam (1995:6) surveyed the substantial body of existing implementation research at the time to compile his 5C Protocol. His analysis considered the variety of models, 'variables' or clusters of variables associated with implementation. From this analysis Najam concluded that despite no general predictive or causal theories of implementation having resulted from extensive work over decades, useful work on implementation can be carried out by using the 5C Protocol to describe a specific policy-development-and-implementation process. The structured descriptive information derived from using the Protocol can be used to build understanding of specific implementation processes. As well as describing specific processes, observations can be made about how processes change over time and on the similarities and differences in processes, building a general understanding of policy-development-and-implementation and knowledge of specific policy-development-and-implementation processes. This could allow insights to be drawn on policy-development-and-implementation in general and, when applied to a process that is on-going, generate insights into potential policy content or process designs, how and why a process might be stuck, or might be directed or influenced by various actions or factors, or possibly even how for example policy content might be adjusted or policy contexts managed to facilitate progress.

The 5C's Najam refined have been used to organise clusters of similar variables presented in the large body of research. The terms adopted define clusters of 'variables' (although they are not variable in the strict sense of the term). Rather, they are terms used as tools, to structure questions and analysis for describing policy-development-and-implementation either in a retrospective case study or to study policy-development-and-implementation as it happens.

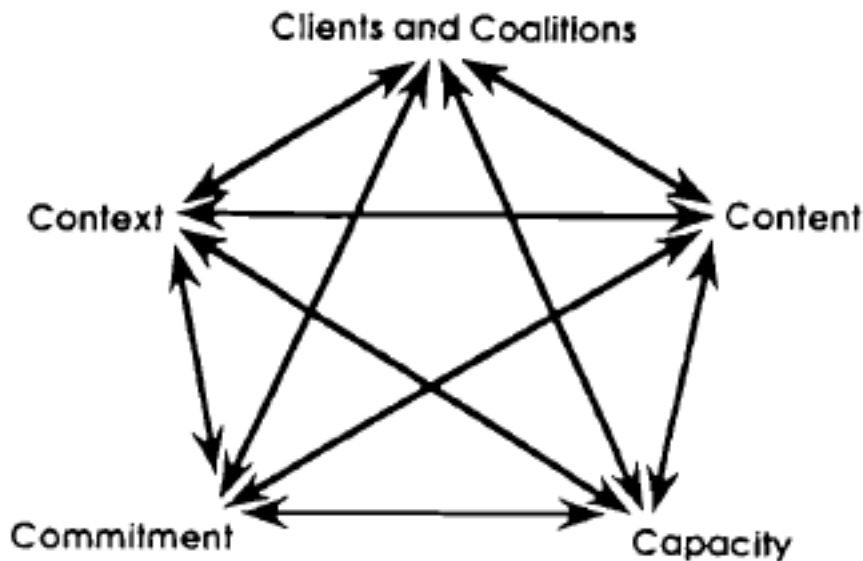


Figure 1: Najam's 5C Protocol

(Source Najam 1995: 35)

The clusters of variables that Najam defines<sup>11</sup> (Najam 1995: 35) are named: *content*, *context*, *capacity*, *commitment*, and *clients & coalitions*. Instead of offering a theory on how to achieve implementation, Najam acknowledges the complexity of implementation and abandons the quest to find predictive theories. Instead he proposes a process of structured description as a useful way forward which we directly quote from below.

- **CONTENT:** 'The **Content** of the policy is identified according to three elements: '(i) What the policy sets out to do, i.e. the policy goals; (ii) how it problematises the issue it sets out to address – the embedded causal theory<sup>12</sup>; (iii) how it aims to solve the perceived problem – the choice of methods. Although inextricably linked, these three need to be identified as distinct entities.'
- **CONTEXT:** 'The nature of the institutional **Context** – The corridor (often structured as standard operating procedures) through which policy must travel, and by whose boundaries it is limited, in the process of implementation. Contextuality is offered here not as a black box of all things social, economic political and legal. Instead, the focus here is on the institutional context – which like the other four variables will necessarily be shared by the larger context of social, economic political and legal realities of the system.'
- **CAPACITY:** 'The administrative **Capacity** of implementers to carry out the changes desired of them.'

<sup>11</sup> Najam (1995) is some 70 pages and is a comprehensive review of implementation literature until that date. We can only briefly list the main features of the 5C's here and encourage the reader to go directly to Najam as his research is crucial in engaging in mitigation policy-development-and-implementation.

<sup>12</sup> This needs to be distinguished from causal theories applied to implementation of policy. This is the causal theory used to explain the policy issue to be addressed, not a causal theory of the policy-development-and-implementation process.

Note that Najam specifies *administrative* capacity. In the case study research we have also considered technical capacity, specifically referring to professional expertise in the applied sciences and law, as these were found to be key. Although we don't extend this to areas such as financial capacity we do extend it to political capacity, which might be considered an aspect of administrative capacity. This area of politics is a contested issue, illustrated for example in Hallsworth (2011: 12) which states<sup>13</sup> that: '...existing approaches neglect politics or treat it as something to be managed.'

- **COMMITMENT:** 'The **Commitment** of those entrusted with carrying out the implementation at various levels to the content of the policy itself, including goals, the causal theory, and methods of the policy (as defined above),'

The commitment refers to commitment from top-down and bottom-up and all levels in between. The commitment as defined here is actual commitment, evidenced by active support, not expressed commitment.

- **COALITIONS:** 'The support of Clients and **Coalitions** whose interests are enhanced or threatened by the policy, and the strategies they employ in strengthening or deflecting its implementation.'

As well as each of the 5C clusters of critical variables of implementation, the interaction between the 5C Protocol and the influence they have on each other is also important to describe how implementation works, as illustrated in Figure 1. Also, the importance of each C-variable varies considerably from case to case and over the duration of policy-development-and-implementation processes which typically take place over years and decades. The descriptions elicited by the questions formulated according to each 'C' change over the duration of policy-development-and-implementation processes as they progress, or fail to progress. Thus applying the 5C Protocol does not lead to a static description of a process but will yield a narrative of dynamic change in the areas described according to the 5Cs and the relationships between them.

## The use of 'Insights'

Research into the implementation literature by the case study teams endorsed the general agreement in the literature that there is no empirical validation of prescriptive or predictive theories of implementation. However, it was accepted by the research teams that the general implementation literature was relevant and useful, and that structured and detailed description of implementation could be relevant and useful for supporting more effective policy-development-and-implementation practice. It was on this foundation that the studies proceeded. The case studies incorporate selected relevant insights from the implementation literature into the descriptions of their implementation cases without attempting to validate a prescriptive or predictive theory of implementation. Rather they aim to provide descriptive information.

The challenge of methodology for this present paper was thus how to synthesise information from a number of studies that were not conducted according to a common research methodology or theoretical framework. This has been done by the extraction of common themes and findings from a variety of sources; general implementation literature, the implementation case studies, two previous MAPS implementation studies, a paper on the LTMS and a Colombian paper on policy formulation. These themes and findings are then presented as insights within this paper.

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<sup>13</sup> Strictly speaking, Hallsworth is referring to policy-making here, but the work also specifically rejects the 'Policy Stages' concept which would include implementation.

## CASE STUDIES ON IMPLEMENTATION

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Before moving on to providing the list of insights drawn as described in the methodology section above, brief overviews of the five case studies which formed the starting point for this paper are presented.

### **Renewable Energy Independent Power Producer Procurement Programme**

In 2011, the Independent Power Producer Unit in the Department of Energy launched its Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), a national programme designed to procure renewable generation capacity from independent, private developers. The Department issued requests for proposals in August of that year forming the basis of a competitive bidding scheme for solar photovoltaic, concentrated solar thermal, wind, and renewable technologies (Department of Energy, 2011a). The Minister of Energy initially allocated 3 725 MW of renewable capacity to be provided by Independent Power Producers, procured through this competitive bidding process in line with the allocations determined by the Integrated Resource Plan of 2010. Subsequently, additional determinations have been announced to continue the expansion of the REIPPPP, and four bidding rounds have been carried out to date, with approved projects of over 6 000MW. The Independent Power Producer Unit was established by the Department of Energy (with funding from National Treasury and the World Bank) and is responsible for issuing, adjudicating and awarding tenders. Power Purchase Agreements are signed between the Independent Power Producers (that are awarded successful bidder status) and Eskom. The Implementation Agreements are signed between the Independent Power Producers and the Department of Energy – which ensures, should Eskom default on payment, that the Department of Energy would be responsible for making payments – in effect providing a sovereign guarantee. The Fiscal Liability Committee of National Treasury formally approved the guarantees of payments. Power Purchase Agreements are funded through the electricity tariff.

The implementation of the programme appears to have been driven through various factors including: sovereign guarantees backing up Power Purchase Agreements; allocations of renewable energy technologies in the Integrated Resource Plan 2010 to meet the emissions cap corresponding to the Peak Plateau Decline trajectory; energy and renewable energy policy and associated legislation and regulations such as the New Generation Regulations (DOE, 2011), and the opportunity of announcing the programme at the time that the country was hosting COP17.

### **The MyCiTi Bus Rapid Transport Programme**

The implementation of a Bus Rapid Transport (BRT) project had been attempted previously in Cape Town by the Provincial Government of the Western Cape (Wood, 2014). However the initial conceptualisation of the MyCiTi project can be traced directly to January 2007, when a proposal was put to the then Mayor of Cape Town, Helen Zille, initiating a process which eventually saw the first vehicles running in May 2010 as part of transport arrangements in support of the 2010 FIFA World Cup. This was followed by an incremental expansion of services, based on interim contractual arrangements, leading eventually in October 2013 to the signing of 12-year contracts with three companies to provide on-going vehicle operations for the first of four envisaged phases, thus signalling the entrenchment of MyCiTi within Cape Town's public transport system.

The MyCiTi BRT is part of a larger initiative to transform public transport in South Africa over 15 years, backed by the National Land Transport Act (Act 5 of 2009), and the Public Transport Strategy and Action Plan (DOT, 2007). But a number of other factors emerged as influential in terms of driving its implementation. These include but are not limited to: The FIFA World Cup accompanied by significant national government funding through the Public Transport Infrastructure and Systems Grant as well as funding from the City of Cape Town for capital and operational costs; expertise and experience from international organisations and the role of local actors to link this expertise with influential local politicians; the compensation packages to bring the minibus taxi industry into the formal transport system; top-level public support from the Mayor of Cape Town, national deputy ministers of Transport and a senior ANC Alliance office-bearer, and the dedicated project team operating outside the line function structure of the City of Cape Town administration.

Despite the fact that the mitigation potential of the project was not stipulated, nor was it a major driver for implementation of the MyCiTi – the long-term environmental and social benefits of public transport are widely acknowledged. Phase One execution is still underway as of October 2015, but is substantially complete.

## **Energy and thermal efficiency in government subsidised housing**

The government in South Africa has been implementing a large subsidised housing project to accommodate a backlog of underdevelopment as a legacy of the apartheid system. This subsidised housing generally has poor thermal performance, consisting of a very basic structure constructed with low-quality materials. Given the low quality there exists great potential for the housing to be upgraded, or built to higher standards to improve thermal performance. This would offer significant benefits including lower full life-cycle costs. The Government has been supportive of policies and plans to implement energy and thermal efficiency in government subsidised housing. This is supported by well-intentioned strategies for both national GHG emission reduction and energy efficiency spearheaded by ministries outside of those with the mandate to deliver housing. As such, the trifecta of housing-energy-emissions appeared to be a clear winner for the local mitigation community of practice.

There have been successes. The case study outlines a process of over 12 years which started with the identification in 2003 of health problems in a climatic region of the country caused by damp conditions. This led to the development of improved energy and thermal efficiency building standards in 2011 and to the recent allocation, by the Department of Human Settlements, of a capital 'top-up' to housing subsidies to cover the additional costs that these improved standards will incur.

However, disbursement of thermal efficient subsidised housing at scale has not proceeded and the successful approval of an additional unit cost per house to implement thermal performance has not been matched by a total programme budget increase leaving developers to downgrade their forecasted delivery of new units. Furthermore, the principles of housing subsidy policy are under review and the scheme may yet not lead to rollout at scale. Despite pilot initiatives displaying possible innovations that could deliver housing with greater thermal and energy efficiency at lowest cost, the case study outlines how difficult moving from pilot to implementation can be in practice.

## Energy Efficiency and Demand Side Management

Energy efficiency policy was first published in 1998 in the South African Energy Policy White Paper and followed with a number of supporting policy and strategy documents and establishment of the National Energy Efficiency Agency. However, by 2009 there was little sign of implementation. The electricity supply crisis resulted in National Treasury providing funds to local government for energy efficiency projects through the Division of Revenue Act (DORA). The projects essentially involve local government submitting business plans to the Department of Energy (who manages the funds and program) for retrofitting municipal infrastructure, mainly lighting (including traffic lighting), with more efficient equipment. Participation has involved 54 out of 294 municipalities with widely-varying success. The municipal Energy Efficiency and Demand Side Management programme has no explicit mitigation target, and although there is an internal target of saving 30 GWh of energy per year; it is not clear whether this target is being met. The programme has had mixed success and illustrates the challenges in getting bureaucracies to use existing procedures to implement energy efficiency retrofits. This is despite municipalities receiving full capital costs for replacing their own equipment, and hence saving on their own electricity consumption costs, and an on-going electricity supply shortage. While there are concerns over the effectiveness and sustainability of the programme, it also shows that – with the right role-players (National Treasury) and incentives (the electricity supply crisis) – national and local government can work together to increase energy efficiency at a significant scale.

## The City of Cape Town Solar Water Heater Programme

The City of Cape Town (COCT) adopted an integrated environmental policy in October 2001 that included the envisaged mass rollout of solar water heaters (SWH) to mid-high income households (COCT 2001). In 2005 the City published an Energy and Climate Change Strategy in which it set targets for the installation of SWHs for 10% and 50% of all houses by 2010 and 2020 respectively (COCT, 2005). This would achieve significant mitigation of greenhouse gasses (GHG) owing to reduced emissions related to reduced electricity consumption. In 2006 an attempt was made to implement the policy by means of a by-law but this attempt failed owing to internal administrative issues. Although never clarified, because the technical process of agreeing on the content of the by-law was never completed, the by-law could have required new houses or renovations involving new water heaters, to use solar-water heaters. The process failed owing to interactions between City departments not being able to reach necessary levels of agreement or cooperation. From 2010 until 2013 another attempt was made to implement the policy by means of a City Billing Scheme. In this scheme the City billing system for electricity payments would have been made available for solar water heater service providers to collect monthly repayments for systems they installed. The rationale for the system being that customers would experience net savings owing to lower electricity consumption. The City would also promote the scheme and public service providers who were selected in a tender process. A two-phase tender process was initiated to identify suitable service providers and the first phase tender was issued but ran into internal administrative trouble and the second phase was not issued. The scheme has since evolved into a simpler and less ambitious scheme, the 'Endorsement Scheme' which does not involve the City Billing System. Original targets of 300,000 SWH in five years were reduced during the City-Billing Scheme tender process to around 150,000 and indications are the Endorsement Scheme, launched in 2013 has yielded around 26,000 SWH installations to date.

In addition to the five South African case studies described above, two additional studies were also conducted as part of this work-stream and are considered in this paper. The first is a paper reflecting on “The Contribution of the LTMS process to South African climate mitigation policy” (Tyler & Torres Gunfaus, 2015). The second is a case study investigating the development and approval process of the Colombian Transport Action Plan (T-SMAP) (Díaz 2015) based on the results of the MAPS stakeholder-driven technical and economic analysis process in Colombia. The Colombian T-SMAP documents an interesting example of the evolution of, a set of typical mitigation-orientated options,<sup>14</sup> into a set of Programmes and Actions committed to within an implementing line ministry. These two papers add considerable value to the overall purpose of improving understanding of the links and processes between recent and current MAPS-type processes for generation of evidence to inform public policy, policy development and eventual implementation<sup>15</sup>.

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<sup>14</sup> The Colombian T-SMAP paper (and the processes it reports on) uses the term mitigation measure for what this rest of this paper uses “option” for: usually a potential technology-improvement/substitution or behaviour change or combination. The term ‘mitigation action’ is also frequently used to mean something similar.

<sup>15</sup> Although we implicitly use a linear Top-Down Policy Stages conception of policy-development-and-implementation here, the rest of the paper will be clear that empirical evidence indicates that in practice this seldom obtains.

## INSIGHTS

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This chapter is the core of this paper. The aim of the chapter is that consideration of these insights will contribute to an improved understanding of how implementation works for policy-development-and-implementation in practice, and also to generate a discussion that permits further advancement of effective work to accelerate implementation to achieve the required scale of substantial material impact.

The need to draw from general implementation literature – as distinct from using mitigation implementation literature – is emphasized. Crucial insights gained from implementation research to date will benefit the mitigation policy-development-and-implementation community of practice. This is especially important considering the growing gap between stated policy intentions and implementation identified in South Africa. Here evidence is growing that the ‘cascading down’ and ‘handover’ modes of implementation specified in the South African Climate Change Response White Paper are facing challenges and delays. That these delays would be expected is borne out in the implementation literature. There is a growing disconnect between conceptions of what *should* happen according to the stated intentions and approach of the policy (‘cascading down’ of policy to implementation or implementers picking up and operationalizing policy that has been handed over) and what *has* happened (little actual implementation). This is in contrast to the persisting belief (Hallsworth et al., 2011: 26) of many mitigation practitioners that policy starts at the top of a hierarchy and is implemented linearly through a chain of actors and levels of government.

### Insight I

***There is no empirical validation of prescriptive or predictive theories of implementation.***

Despite vigorous attempts over decades, a predictive theory of implementation or a theory linking context and process to outcomes has not yet been achieved (Najam 1995: Pettigrew 2012). It has also been found that a “prescriptive theory” which can conclusively link policy content, context and process to outcomes has eluded researchers.

Najam stated in 1995 that ‘we are still nowhere near a widely accepted causal theory with predictive or prescriptive powers [for policy-implementation]’ and much more recently Pettigrew in 2012 states that ‘one of the major limitations of process research is a failure to conduct empirical studies which link changes in context and process to outcomes.’

### Insight II

***The idea that implementation is merely a “cog in the administrative machine” has been debunked.***

Extensive research literature, which has considered empirical evidence of actual implementation over the decades starting in the early 1970s, generally finds that the notion of implementation being merely “an administrative cog in the machine” Najam (1995: 8) is not supported. Indeed Najam asserts that ‘the relationship between policy and action ... must be viewed as a complex assembly job involving the fitting together of different interests and priorities’ Najam (1995: 13), and further Najam (1995: 34) frames implementation as ‘a dynamic process of negotiation between multiple actors, operating at multiple levels, within and between multiple organisations’. Najam’s insights are particularly relevant since mitigation policy typically requires a substantial departure from business as usual, which in turn requires substantial changes at many levels. The notion that implementation is little more than an “administrative chore” once policy-making is done simply does not hold.



## Insight III

***Adoption of a policy, or completion of an implementation strategy, does not necessarily lead to successful implementation, especially when substantial departures from business as usual are involved.***

A most important finding from the literature<sup>16</sup> is that implementation is complex, political and does not necessarily follow on adoption or promulgation of policy. It is understandable that this may be a controversial assertion and difficult to accept. This is particularly so when considerable effort has been put into the adoption of a policy such as a high-level policy process that has involved thorough engagement with stakeholders and is believed (by those involved) to have identified and addressed resistance leading to garnering of necessary support. However, no matter how reasonable, clear and well-motivated a policy is, and no matter how thorough a high-level stakeholder engagement process has been, if a given policy requires a significant departure from business as usual as well as the active participation of multiple actors with conflicting objectives, then it is most likely that the complex politics<sup>17</sup> of implementation will come into play. Some research goes so far as to say that:

*"...the notion that policymakers exercise - or ought to exercise - some kind of direct and determinatory control over policy implementation might be called a 'noble lie'" (Elmore, 1979:603, cited in Najam 1995:10).*

Despite the problematic nature of implementation, it is still necessary to formulate and implement policies, strategies and plans, but we should expect messiness during these process, and in general not even expect them to be have ended up as easily distinguishable, separate processes by the time impacts 'reach the ground' at scale. We should allow for a broader conception of what plans are able to achieve, and be aware that that initial high-level formulation of a policy or plan may be a moment in a set of processes, which might need to be re-visited, possibly several times. For example, as phrased by Brynard, (2003:656, cited in Kruger & Tait 2015:11) "[P]olicy is significant, ...not because it sets the exact course of implementation but because it shapes the potential for action". We repeat the well-known adage<sup>18</sup>: it's the planning that's important, not the plan.

However, even with excellent and on-going planning, based on the best evidence-informed processes, the essentially political nature of policy-development-and-implementation will inevitably remain. People and organisations operate according to multiple motivations and objectives. Hallsworth et al. (2011:80-99) provides a very useful 20-page summary of this inevitability, and also the desirability of politics in policy-development-and-implementation<sup>19</sup>.

The full resolution of how responsibilities, costs and benefits are distributed is not possible solely through technical or scientific means during top-level policy formulation. This holds true both in the policy-development-and-implementation context inside the state, and in the related struggle for influence, resources and benefits outside the state, and in

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<sup>16</sup> These findings probably refer to democratic market economies such as South Africa and the Latin American countries involved in MAPS. We have not yet assessed relevancy to more centrally planned political systems such as China.

<sup>17</sup> The general implementation literature contains many empirical examples and models recording and illustrating that even when clear policy or strategic decisions have been made, to achieve consequent action that gives effect to the policy or strategy, supportive action needs to be forthcoming from a variety of institutional and individual actors with a variety of often conflicting viewpoints, interests and needs. This almost inevitably leads to the struggles recorded in the annals of institutional and individual histories of implementation. These struggles often impact on other aspects of policy-development-and-implementation, and are an essential element of the messy mixed up nature of the whole enterprise. When the policy or strategy challenges convention and/or involves a change in status quo, the complexity and intensity of the struggle and the difficulty in garnering necessary supportive action would reasonably be expected to increase.

<sup>18</sup> "Plans are worthless but planning is everything" Dwight D. Eisenhower (1957).

<sup>19</sup> This work focuses on 'policy-making' but (i) firstly, --see Insight IV below-- implementation research agrees on the impossibility of separating out, in practice, the 'stages' of the policy-development-and-implementation 'cycles' and in fact relegates these 'stages' and 'cycles' to a theoretical notion not validated in empirical research and secondly, (ii) careful reading and corroboration in the case studies reveals that this insight is applicable to all of the policy-development-and-implementation examples in the case studies.

interactions between state and non-state players. Typically mitigation policies will require the taking on of responsibilities and the re-arrangement and allocation of costs and benefits that typically involves a multitude of actors. There will invariably be many options of how to implement a policy, even a highly specific and clearly defined policy. These differing options will have varying impacts on each of one of the multitude of actors. Even in the event that evidence and science alone could facilitate a planned logically optimum implementation solution, actual implementation inevitably will take place in real departments run by real people with multiple objectives. Inevitably there are also extraneous influences active in choosing solutions, resolving responsibilities, and balancing objectives and interests.

This essentially political nature does not allow for the notion proposed in a ‘policy sciences’ perspective that would seek to “...provide technical arguments to reach mutually acceptable answers”<sup>20</sup>. Much of the position on the limits of evidence and reason and science taken in this paper is summed up by Kay (2010), cited in Hallsworth et al. (2011: 82), namely – “The success of the physical sciences has encouraged us to believe there might be a science of decision-making. With its aid, all kinds of problems could be managed objectively... There is not, and never will be, such a science. Our objectives are typically imprecise, multifaceted and change as we progress towards them – and properly so.” Hallsworth et al. go beyond viewing this as a necessary evil, rather embracing it as adding essential value to policy-development-and-implementation processes. In this view, the political skills of key managers/ bureaucrats charged with implementation are probably as necessary and important as any other resource or capability, as reflected on by Clifford Shearing in his review (Shearing 2015, personal communication) of the case study of the Solar Water Heater Programme in Cape Town. He makes the point that implementation of policy requires a thorough understanding of the context in which the policy is placed, including understanding the relative power of officials that (necessarily<sup>21</sup>) have conflicting goals with each other. He posits that successful implementation requires an alignment of goals and adds that planned resistance, by those motivated to undermine the policy objective, leading to a misalignment of goals should be *anticipated* and not come as a surprise (Shearing 2015, personal communication).

## Insight IV

***Policy Cycle models are more useful as analytical tools with which to order thoughts about policy, than as predictive models to explain how policy works.***

The Policy Cycles<sup>22</sup> model, based on thinking of Lasswell (1951) posits that the policy development process and the policy implementation process are distinct and can be effectively separated in practice. We assert that this is a theoretical notion that has not been validated by empirical evidence.

Hallsworth et al. (2011:5) noted when reporting on interviews with 20 former ministers and 50 senior civil servants from eight major central government departments in Britain found that ‘Virtually every interviewee dismissed Policy Cycles’ and references the 1999 British Cabinet Office’s rejection of the use of policy cycles because ‘...practitioners did not feel they accurately reflected the realities of policy making.’ Hallsworth et al. explicitly say that: “Policy making does not take place in distinct stages.” Reviews of policy implementation literature between 1972 and 1995, in Najam (1995), report an on-going conflict between conceptions of a notional, theoretical, orderly progression of policy (which seems mainly to be based on un-validated assumptions and policies and plans on paper) and the detailed empirical record of the “often inseparable” ‘stages’ happening in no specific order, or at the same time and which interact with each other.

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<sup>20</sup> See insight IV below for a footnote relating to theory and ‘policy sciences’.

<sup>21</sup> Added by authors: the notion that officials act in concert because they are employed in the same administration, is a dangerous one in assessing the complexities of implementation because it overlooks the conflicting multiplicity of very real different interests of individuals and departments, and levels inside departments.

<sup>22</sup> Sometimes called Policy Stages model, but essentially the same concept as the Policy Cycle includes Policy Stages.

Nonetheless, twelve years after the rejection by the British Cabinet Office and despite the findings of researchers in the field, policy practitioners still use policy cycle and policy stage terminology. This is understandable. The terms are useful in organising thought about policy-development-and-implementation through their separation of elements, and the implicit suggestion of an ordering. Yet despite this practical aide, it is necessary to bear in mind that “policy-making stages do not just often overlap, they are often inseparable. In the real world, policy problems and policy solutions frequently emerge together” (Hallsworth, 2011: 6).

What to do? To be practical, some kind of “double-think” might be required: Whilst making orderly step-wise plans, also make provision for managing parallel processes, environments and structures so that flexibility, inputs and changes can be accommodated. In this way, interventions can be designed so that the ‘problem situation’ could be guided towards implementation solutions in a real world of non-linear, non-sequential, iterative messy action. However, this should be done with the knowledge that other parties will probably have similar intentions, and that their solutions, and actions, will favour their interests. This is unavoidable.

## Insight V

***The need for top-down and bottom-up approaches as well as the active participation and support of a large number and variety of institutions and organisations.***

By ‘top’ we refer to the legislative/ policy/ executive functions of organisations, as opposed to the ‘bottom’ operational level<sup>23</sup>. The classical top-down process “...starts from the authoritative policy decision at the central (top) level of government and asks to what extent were the actions of implementing officials and target groups consistent with (the objectives and procedures outlined in) that policy decision...” (Sabatier, 1986: 22, cited in Najam 1995: 13 ).

The bottom-up explanation of action in the implementation literature, was largely a reaction to the top-down approach, because of weaknesses of the top-down framing of implementation, and the accumulation of evidence indicating that top-down perspectives provided very incomplete descriptions of policy-development-and-implementation processes, and often did not work out as conceived. Empirical evidence demonstrated that multiple actors are often involved in re-interpreting, adjusting and/ or resisting top-down processes. In extreme cases ‘street level bureaucrats’<sup>24</sup>, (Lipsky, 2010) effectively ‘make policy’ because of the high degree of insight and institutional knowledge that they have with regards the implementation of public programmes and policies<sup>25</sup>, and also to their *de facto* power to decide what happens at their level in the organisation. It also drew on the evidence of implementation that occurred in parallel or before policy, completely outside of the processes included in the top-down view. (Najam, 1995: 13)

Searchers for predictive or causal general theories might ask whether this is because implementation, in practice, is more driven from the ‘bottom’ or whether (as exemplified by the South African case studies) South African implementation tends to be weak on top-down action, possibly explained by lack of managerial, institutional or technical capacity. This however would be to miss the point as it limits analysis to a top-down perspective, where the evidence is that more complicated

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<sup>23</sup> In contrast to ‘top-down’ meaning the relationship between international bodies and national bodies (e.g. UNFCCC to national government) or between national government and local government.

<sup>24</sup> Street level bureaucrats refers to public government or service workers lying below the policy or strategic level in government hierarchy.

<sup>25</sup> For example, these workers can choose the extent to which they prioritize multiple competing priorities and hence give more or less effect to the multiple policies which are typically in place. While still acting strictly within the ‘letter of the law’ or policy, there is typically much scope for discretion and a variety of interpretations. There is also the very real and normal process of resistance to change, especially when this is substantial or transformational and possibly even in conflict with the interests of the staff concerned. In some cases, which are not necessarily that exceptional, resistance can take the form of passively delaying and frustrating implementation to the effect that it is stymied.

messy processes and dynamics are the more relevant issues. Missing the point like this could lead to the 'solution' being offered that more capacity and enhanced power and authority at the top will solve the problem.

Najam (1995: 13) states: "the single most important fault line in the (implementation) field has been that which divides the "top-down" view of implementation from a "bottom-up" view. For example, in the case of attempting to explain the failure of 'implementation' using the single causal explanation of lack of capacity just mentioned, the top-down view would be the point of reference, and a solution of building capacity would be expected to 'solve' the 'problem'<sup>26</sup>. However, the 'problem' might very well remain because bottom-up effects and issues are at play, amongst numerous other factors mentioned in the insights section of this paper. This is an example of the fault line and the effect it has of narrowing choice to a single view that explains policy-development-and-implementation in a scientific, problem-solution modality. Najam details this fault line and concludes that there is no need to choose one perspective over another. On the contrary, both are useful and that usefulness varies from case to case. It would therefore seem necessary to apply both perspectives in practice, for each situation, and also as the situation develops over time, and to assess the utility of the knowledge generated in this on-going process.

## Insight VI

*The participation and support of a large number and variety of institutions, organisations and departments are often necessary for policy-development-and-implementation success. Failure or success could be contingent on the arbitrary (non) support of any one of these players.*

This applies particularly to the kinds of transformative or substantial policy interventions involved in mitigation, in other words not incremental or refining business-as-usual kinds of interventions. The Subsidised Housing Case Study (Dobson, 2015) provides a good example of a large number of organisations and different roles played. It tells a fascinating story of at least nine autonomous entities offering their active, voluntary participation, and that the active and constructive participation of all of these actors turned out to be necessary in developing a technical standard, without which the consequent implementation could not have been possible<sup>27</sup>. Even when the technical standard had been developed, years of further process, and additional actors, were necessary to begin implementation at scale, and even so, this is still in its beginning stages and whether there will ultimately be significant material impact hangs in the balance.

While it might be obvious in hindsight that multiple parties had of necessity been involved in a successful policy-development-and-implementation programme, in advance it is often the case that is not even possible to identify who the necessary government departments and other parties will be. Also, while senior officials at the 'top' might like to believe it, the empirical record shows that their cooperation will probably also not be able to be forced. Once again, messiness, complexity, unpredictability and the limits of formal authority in securing action are key features and policy-development-and-implementation processes need to be conceived and managed accordingly.

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<sup>26</sup> We deliberately put 'problem' and 'solve' into quotes here, to highlight possibly the most important theoretical issue behind the thinking that informs the underlying argument in much of this paper, namely not attempting to find scientific predictive or causal explanations for policy-development-and-implementation. This is based on a rejection of a conception of 'policy sciences' that would seek to "...provide technical arguments to reach mutually acceptable answers, and disagreements based on values would drop away, as would rhetoric and concern for power and position (Fay, 1975: p. 22, cited in Turnbull, 2010:2). We stated at the outset that the purpose of this paper is meant to provide 'insights and recommendations on policy-development-and-implementation for practitioners in the field of climate change mitigation', and thus we relegate these theoretical issues in the footnote. In the course of the research for the current paper it has become apparent that a companion paper addressing theory could be useful.

<sup>27</sup> Similarly to a previous footnote on the position taken in this paper on theory and the conception of 'policy sciences', we note here that theories involving 'complexity', 'tipping points', 'nodes and networks' would be relevant to elaborating this insight, and similarly be note that the purpose of this paper is presenting practical insights to implementation of policy-development-and-implementation practitioners, hence the omission of this elaboration in the current paper.

## Insight VII

***The implementation of “mitigation projects” is often brought to bear through a policy or policy programme that does not have mitigation as its primary stated goal or area of concern.***

This is an implementation insight that is already quite well known within the mitigation community. It is exemplified in existing mitigation implementation literature<sup>28</sup> and further corroborated in the suite of implementation case studies. The subsidised housing case study demonstrates how health policy concerns drove a process that ended in the implementation of an energy efficiency policy with mitigation impacts. The MyCiTi case study shows how transport policy was driven to implementation by an external event - the FIFA World Cup and produced mitigation benefits.

In the Colombian Transport Sectoral Mitigation Action Plan (Transport-SMAP), which has not yet moved to implementation, the process of taking recently formulated top-level mitigation policy to the next step has explicitly placed it inside a transport policy. The Colombian Low Carbon Development Strategy, the overarching framework in which the Transport-SMAP is placed, was framed primarily in terms of prioritising sector performance and implementation, *not* mitigation impact:

*‘The goal of the Colombian Low Carbon Development Strategy is: 1. To design policies, programs and actions in each productive sector, that will improve the efficiency and competitiveness of each one of these sectors and will reduce environmental impacts and provide significant integral benefits for the development of the country. 2. To implement those policies, programs and actions in the short, mid and long term by each one of the sectors involved in the process.’ (Díaz, 2015<sup>29</sup>)*

Here it is accepted that mitigation policy will be subsidiary to other policy and this is built into the policy-development-and-implementation process from the start.

## Insight VIII

***The policy-development-and-implementation process often involves substantial policy content evolution as it develops from conception to implementation.***

Mitigation policy might be able to drive the policy-development-and implementation process but to achieve this often requires a re-statement of the content of the policy in order to take into account different organisational settings, including the differing perspectives of the various actors involved. An example is the Colombian Transport-SMAP. Although this has not had material impact yet, it is an example of how mitigation framing and language, as typified in the terminology of MAPS style mitigation potential analysis and scenario building processes, was adapted and evolved for incorporation into policies and plans in *the specific organisational setting of the Colombian Transport Ministry*. It seems that often mitigation policy needs to be framed in a way that is meaningful, understandable and acceptable to the ministry or line department into which it will become part of an operational programme – i.e. the content needs to fit into the host department and not the other way round. This is true particularly when the department does not have mitigation as a primary, or even high-priority, objective (currently the norm). In so doing the content<sup>30</sup> of mitigation policies evolves. This evolution may mainly involve language but could also involve significant alteration of the content in order to meet multiple objectives, which might in turn require significant compromise or re-design.

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<sup>28</sup> There is extended literature on this in the NAMA fieldwork (Rudnick, A. 2015 personal communication) and MAPS co-benefits literature e.g. Cohen, C.. None of the five South African case studies had mitigation as its primary goal and only two, namely the REIPPP (Boule and Boyd 2015) and the City of Cape Town SWH Programme (Trollip et al., 2015) had mitigation as an important policy driver.

<sup>29</sup> Plan de Acción de Mitigación Sector Transporte. Ministerio de Transporte, 2014

<sup>30</sup> We mean content here as specifically defined by Najam, see earlier section on the 5C Protocol

In the context of the Colombian Transport-SMAP the 36 mitigation measures started out being expressed in mitigation terms but during the line-ministry process were re-framed into transport-policy or transport-programme terminology and were then fed into a further content development process. It is also instructive that even after insertion of the mitigation policy, the sectoral goals remain clearly transport sector goals: mitigation policy is re-stated to be subsidiary to these goals. The Colombian Transport Ministry supported by USAID LEDS experts classified each of the mitigation measures to fit into a structure of Policies, Programmes and Actions inside the Transport Department's programmes.

## **Insight IX**

*New or special organisational structures might be necessary to achieve effective implementation.*

The successes reported in the Renewable Energy Independent Power Producer Procurement Programme and MyCiTi case studies relied on what were essentially "programme execution units" located outside the operational bureaucracies. These were specially set up, headed up by senior staff and provided with significant additional professional and organisational capacity. They were allowed substantial flexibility in terms of the normal standard operating procedure limitations. While this might not always be necessary it is notable that the two case studies that achieved substantial success in terms of material impact relied on such arrangements whereas the three case studies that achieved limited material success and involved prolonged internal organisational struggle, attempted implementation inside existing structures and within the limitations of standard operating procedures. These were, the Energy and thermal efficiency in government subsidised housing study (Dobson, 2015); Energy Efficiency and Demand Side Management (Kruger & Tait, 2015), and the City of Cape Town Solar Water Heater Programme (Trollip et al., 2015).

## **Insight X**

*Persistence appears to be a common ingredient in the case studies illustrating successful implementation and those illustrating progress.*

In all five South African case studies the initial primary policies regarding the programmes studied were at least ten years old. During those ten years, despite the existence of policy, there had been little achievement in terms of substantial material impact.

The policy-development-and-implementation processes have all been characterized by continuous struggle, initially to get policy goals approved and subsequently to muster resources to get progress on the ground. Each of the case studies presents clear evidence of on-going struggle with sequences of regular strategic plans, legislative and regulatory development, new institutions and institutional change and development, but often no corresponding action in the material world. All cases show the requirement of persistent individuals, organisations and/ or systems.

## **Insight XI**

*A common feature of all the case studies was the impact of key individuals on policy-development-and-implementation processes.*

All case studies mentioned the key role of specific individuals. There were individuals that went beyond the call of duty, making existing bureaucratic systems work for cases that lay outside business-as usual and there were individuals that were appointed in special-purpose leadership positions, in special-purpose organisational structures, that had authority and deep institutional knowledge and that could lead teams to perform out of the ordinary activities. Although these six case studies can't be viewed as a representative sample, it is nevertheless interesting that in those case studies that have clearly met with success in terms of the required or envisaged level of substantial material impact, all had individuals specially brought

in. They are even named in the case studies: Karen Breytenbach in the REIPPP, Philip van Ryneveld, Helen Zille and Mike Marsden in the MyCiTi. In the case of the Transport-SMAP the Vice Minister of Transport is mentioned as playing a key and pro-active role. None of these key individuals were from the mitigation community – a common feature was their seniority, authority and deep institutional knowledge of their ‘host’ organisations, the organisations that had created the special purpose organisations. The other case studies that have met with “mixed” success, also mentioned the importance of champions although the actual individuals aren’t named and they are described as facing an uphill battle ‘inside’ the bureaucratic systems typically without the power or authority to alter standard operating procedures.

## Insight XII

*An enabling legal and regulatory framework is necessary, but not sufficient.*

In all the policies associated with the five South African case studies, policy mandates, regulations and strategic plans etc. had been specifically developed and promulgated. While these frameworks did not directly lead to action, when action occurred they were necessary in order to enable it to happen. Over and above the legal and regulatory frameworks that had been put in place, external situations such as a key individual/ champion, the South African electricity crisis, the FIFA World Cup and COP17 were key factors in triggering or accelerating the pace of the policy-development-and-implementation processes to achieve required material impact. For those case studies without an external event that triggered the move towards implementation on the ground, progress in achieving policy-development-and-implementation process of required material impact remained more of an on-going struggle with limited impact.

Building on the issue of legal and regulatory frameworks is that while they can be used to provide the enabling conditions necessary for action to take place, they can equally be used to impede the implementation of a policy initiative. This occurs when compliance with regulations (that counteract the regulations that enable implementation) are enforced by officials with conflicting or competing goals. (Shearing 2015, personal communication). In new areas of development relevant to mitigation, such as renewable energy in electricity systems, the new laws and regulations are often untested and require deviating from business-as-usual. For risk-averse bureaucrats, or those that oppose the policies, uncertainties in these new laws and regulations can be used, against their inherent intention, to impede progress.

## Insight XIII

*Applying a set of structured ‘variables’ (such as Najam’s 5C Protocol) offers a practicable<sup>31</sup> method for generating crucial knowledge about mitigation policy-development-and-implementation processes.*

Both Najam’s work and the research conducted in the MAPS case studies demonstrate that it is possible to describe implementation in terms of what Najam calls ‘critical variables’: the clusters of variables described in the methodology section above. In other words, it is possible to conduct retrospective research to provide useful descriptions of what has happened in policy-development-and-implementation. It is also possible, and valuable for deepening understanding of implementation, to organise the research process and results using a structured framework. This framing allows for general descriptive insights to be drawn. The current experience with the case studies suggests that these clusters of variables could be used *during* the policy-development-and-implementation processes, to build an understanding of the processes on the

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<sup>31</sup>The REIPPP and SWH case studies use the 5C Protocol, they use them very differently, as they are meant to be used. They provide useful example of how the Protocol can be used. It is not within the scope of this paper to demonstrate the actual usage of the 5C Protocol. The reader who wants to understand the 5C Protocol more deeply is encouraged to read the aforementioned case studies, and of course, Najam (1995).

go and potentially to identify challenges and make adjustments to address obstacles or stuck processes and thereby accelerate progress.<sup>32</sup>

As mentioned in the methodology section these 'variables' are not variable in the strict sense of the term, that is they are neither factors nor traits that will be assigned 'levels' or 'amounts' or 'values' through some kind of instrument of measurement. Rather, they are terms which in the example of Najam's 5C Protocol, have been defined and are used to produce rich or deep descriptions: they are used as tools to structure questions and frame analysis for describing policy-development-and-implementation. Thus instead of attempting to show the operation of predictive or causal relationships, the case study work on policy-development-and-implementation provides rich and/ or deep descriptions, generated and arranged using the 'variables'. These descriptions build understanding of policy-development-and-implementation and could assist with these processes, for example in the design of policy content and processes, or the management of these during the typically messy process of policy-development-and-implementation.

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<sup>32</sup> Prof V Naidoo, (personal communication, August 2015) recommends accessing Paul Sabatier and Daniel Mazmanian's book, 'Implementation and Public Policy', specifically the chapter which outlines a framework of variables to study implementation. It is forward looking in its design but draws lessons from the retrospective case research. This is a working paper and thus this is taken note of for future development of this research.



## CONCLUSIONS

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Over a year ago we started a research project that aimed to look at and define ‘implementability’. An assessment of ‘implementability’, would be based on a conception that policy-development-and-implementation proceeds in a linear, logical top-down fashion. We now know from the wealth of empirical evidence and research, corroborated by the finding from the South African case studies, that this rarely happens, if ever.

There are three main general findings:

Firstly, a core finding from the implementation literature, corroborated by the MAPS case studies, is that ‘implementation’ is typically not separate from policy development and implementation, and that it cannot be separated out. In contrast the ‘Policy Cycles’ theory of policy-development-and-implementation would support the idea that implementation is a ‘Policy Stage’ that is or could be separate. This concept of a ‘Policy Cycle’ has been widely written about, but has not been validated in empirical research. It remains a theoretical notion that is perhaps useful for planning purposes, but is not useful for understanding actual policy-development-and-implementation as is documented in empirical research, and as it happens in the real world. While policies and policy goals might be successfully formulated in a separate stage, empirical research is conclusive that by the time substantial material impact ‘on the ground’ has been reached, a messy, non-linear, often iterative process will probably have been followed. This messy process involves many parties and engages in politics at every level – internal, external and more. There is often substantial evolution of the initial policy content and/ or policy goals, and thus when a policy or policy goal has been formulated what happens is not a ‘moving to implementation’ but an invocation of the whole policy-development-and-implementation set of processes.

Secondly, the implementation literature has not validated predictive or causal theories related to the complex set of systems typically involved in policy-development-and-implementation. The literature is also clear that such theories elude research.

Thirdly, despite the two largely ‘negative’ findings above, this does not preclude the generation of much useful and relevant information pertaining to policy-development-and-implementation processes, both to improved understanding of past cases and to understanding processes on-the-go, so as to manage them better. There are feasible approaches to generate this information and understanding. This could be used to help initiate, manage and accelerate implementation within the messy policy-development-and-implementation process, bearing in mind that one does not ‘move to implementation’ but rather that one could move from having a policy, or policy goal, into the complex world of policy-development-and-implementation processes. These approaches cannot guarantee success, but their employment could potentially assist with policy content and policy-development-and-implementation process design, get things going, speed things up, or get them unstuck. This could serve the purposes both of better policy-development-and-implementation strategy design and also the management of the often convoluted processes that are typically involved. The approach we have investigated to generate such knowledge and understanding is Najam’s 5C Protocol. The usefulness of the 5C Protocol as a framework for generating knowledge and understanding of the implementation processes in the case studies is a key outcome of this work.

As well as the above three general conclusions, the study presents a set of specific insights drawn from the implementation literature and corroborated by the case studies. These are detailed in the study text above. In addition we present the following more general conclusions which draw partly on the insights.

While an emergent theme both in the literature and corroborated in the case studies, is the necessity to involve all actors in the policy-development-and-implementation process, this is different from pure consensus building. The case studies show that in many cases influential actors are required to push things along, amidst and despite opposition from others. Opposition is normal and typical and occurs at all levels. Thus while in some cases it is possible to build consensus, in others there will be fundamental differences in interest that will need to be resolved in political processes and through political, managerial and organisational skill and leadership. It is relevant at this stage to note that in many cases the resolution of differences in interest and motivations remains essentially political in nature. This is applicable even between members of the same organisation or between departments in an administration or between levels of authority. This is typically even more so for actors within *different* organisations.

MAPS efforts, as timely and necessary as they have been, have mainly involved formulating policies at the 'top' level, or setting policy goals. The MAPS Programme has not yet engaged with implementation within policy-development-and-implementation. Moving forward there will be on-going efforts involving knowledge co-generation and active engagement with, and involvement of actors in all areas of policy-development-and-implementation processes, but a focus will extend and expand from policy and policy goal formulation to more of the processes involved with policy-development-and-implementation. This could take many years, or even decades if extensive documented experience of previous policy-development-and-implementation is a guide.

# RECOMMENDATIONS

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So where to from here? Based on the general conclusions above and the detailed ‘Insights’, this paper now puts forward practical recommendations to the individuals and organisations responsible for the design, steering and execution of MAPS (and similar) processes in countries. To move to implementation at the scale required is an enterprise very much larger than the initial MAPS options analysis and scenario development and will require an extension of the mitigation community and its integration with the broader policy-development-and-implementation. There are two main areas of recommendation: knowledge and action.

## 1. Knowledge

In addition to areas of knowledge developed so far in MAPS processes, an extensive implementation literature, and the implementation case studies done in the MAPS Programme, there is strong indication that translation of national goals, firstly into implementable policy, and also into implementation programmes and implementation actions, will require additional areas of knowledge and action. They also indicate that planning, motivating and organizing these additional areas of knowledge will probably involve an order of magnitude of effort greater than what MAPS created the conditions for. The answers to “how?”, “who?” and “when?” regarding implementation urgently need to be better understood in order to lead action that will result in substantial material mitigation impacts at scale. In all likelihood many of these answers will come from the very people involved in taking the action, people from all levels of seniority.

### **RECOMMENDATION I: FAMILIARIZATION WITH IMPLEMENTATION LITERATURE AND AREAS OF EXPERTISE**

Those interested in moving from mitigation options specified as ‘top’ level policies or goals, to implementation, should become familiar with general implementation literature and remain up-to-date with new research in this field. This will provide necessary information on the considerable challenges involved, and will probably save the repetition of “mistakes” that are already documented.

In addition to literature that deals explicitly with implementation there are related areas that are useful for, designing and managing implementation, for example; Organisational theory, Management theories, Behavioural economics, Public administration and Industrial psychology/ sociology.

### **RECOMMENDATION II: STUDY IMPLEMENTATION IN CONTEXT, CONDUCT CASE STUDIES**

While there are many useful and valid general insights, implementation is highly content and context specific. Practitioners are advised to extend what has been identified so far in the literature by conducting empirical research that will provide information about the actual settings within which it is envisaged the policy-development-and-implementation will likely be carried out. Development, through (retrospective) research and case studies, of descriptive information on actual implementation in specific settings is essential to understand the challenges of implementation in a specific setting. Case study information does not guarantee success but certainly does map the terrain and provide crucial information to start out on a journey towards producing substantial material impact on the ground. It could help mitigate risks of attempting implementation designs/ modalities that will get terminally stuck, or ultimately fail. While these studies can’t ensure success, they can improve chances. The MAPS South African and Colombian case studies are an initial example of such retrospective research. The skills and capacity to do this work will probably still largely need to be developed. But the information resulting from this will most likely pay back the investment many times over.

The implementation literature contains a large body of useful methods and examples of how implementation can be studied which is useful in the development of case studies. There are detailed accounts of methodologies and a wealth of illustrations of those methodologies in research into actual implementation examples. Based on the MAPS implementation research experience, involving different disciplines in the development of the case study, for example, Public Policy Theory, Public Administration, Management and Organisational Development and Change theory were key. Giving practitioners versed in these areas a more central role than they currently play would probably be an advantage. Also, active participation of implementation practitioners, meaning the people involved in operational functions in line departments, would be an advantage. For example, the City of Cape Town has a programme where city officials conduct research in the university academic environment and academics are embedded in the City of Cape Town, and these individuals interact with each other and within City structures. An adapted version of this concept could be applied to implementation case study research.

## **2. Action**

### **RECOMMENDATION III: BE AWARE OF AND OPEN TO CHAOS, COMPLEXITY & CONTENT EVOLUTION**

Even though the initial phase of generating mitigation action plans and scenarios within MAPS has managed to produce highly rational plans based on sound evidence and supported by a wide range of stakeholders and interested parties, practitioners should not expect, or plan, for implementation to proceed in a similar orderly manner. Instead, practitioners should expect, and plan, for the chaos and politics of implementation in response to its complexity, and multiple objectives and conflicting interests of the many parties involved. Flexibility, conflict and evolution will be constants. The response to this should not be: to firmly adhere to the evidence generated so far, to attempt to untangle the complexity or to try to solve politics with scientific method. The response should be to accept the complexity and politics and deal with them as such.

At all stages of development or evolution of policy content, numerous inputs should be actively integrated into the existing knowledge base. These could be operational, relationship, functional and political amongst others. Partly as a result of this, that policy content will evolve. One evolution will be in terms of how it is expressed. Different communities say the same things in different ways. Ideally, mitigation policy programmes should in the first case be framed and expressed in terms of the existing policies and programmes of the line-departments that will be responsible for their implementation. The Colombian T-SMAP case study is an excellent example of the evolution of mitigation options as they become planned actions within programmes. Another evolution could be in terms of content – including numbers – as things do not occur as envisaged at first. This is an acceptance of the realities of implementation. Consensus may not be possible. Power dynamics could be an important factor. Implementation strategies have to take these into account. Indeed the initial conception might even need a complete re-formulation, or undergo several iterations. An open dialogue from the beginning between all parties will greatly strengthen the implementation process, whereas a hand-over for implementation with the condition that there be no big changes could lead to a stalemate or very slow progress with weakened material impact. Iterations should not be seen as a failure of the first attempt. In many cases when looking back at what actually happened iterations and re-designs are the norm and thus accommodation of these should be designed into policy-development-and-implementation processes. While commitment and persistence might be key requirements flexibility is probably as important.

### **RECOMMENDATION IV: MOVE FORWARD TOGETHER; ENGAGE WITH AND BECOME IMPLEMENTING PRACTITIONERS**

The paper proposes that instead of policy being designed according to implementability factors and a subsequent hand over to implementing agents, that knowledge is built and continually and applied in policy-development-and-implementation processes within combined and integrated mitigation and implementation communities. Where MAPS processes were a step into a policy-development-and-implementation process, a critical mistake would be now to just talk about the ‘and-

implementation' end. The MAPS outcomes –namely policy content and networks- need to embark in a journey into the unknown, the chaotic, ever changing, complex journey towards implementation.

All levels and elements in the formulation and on-going development and adjustment of policy-development-and-implementation programmes should be involved. The so-called street level bureaucrats can make or break the implementation of a project. What can appear from the outside as a minor detail of operating procedures or regulations can present major obstacles to operations on the inside. Practitioners should accept, allow and encourage top-down and bottom-up perspectives to be viewed as equally valid and useful. Equally important, mitigation practitioners should make a greater effort in recruiting and engaging additional areas of expertise to bring the required know-how on board for carrying out policy-development-and-implementation.

**RECOMMENDATION V: DON'T RELY ON PREDICTIVE THEORIES. DO USE EXPLANATORY VARIABLES SUCH AS NAJAM'S 5C PROTOCOL**

In addition to using explanatory variables such as the 5C Protocol to do retrospective research case studies, these can be continually used during actual policy-development-and-implementation processes in order to improve policy design, consider next stages, accelerate progress or unblock processes. The 5C Protocol is not the only possible set of clusters of variables. Many similar sets could be defined and used, but the principle remains – describing properly what is happening at all levels, in a structured way, and continually as the processes develop, can reduce risks of getting stuck and help with getting unstuck or accelerating progress. Formulating these descriptions needs to actively involve all levels, so that solutions are formulated that engage the expertise at all levels and generate buy-in.

As policy-development-and-implementation is dynamic and complex the state of the process will continually evolve, typically in an unpredictable manner. Every level or phase in policy-development-and-implementation would probably benefit from on-going description and evaluation by means of explanatory variables such as the 5C Protocol. Similar to Eisenhower saying: "Plans are worthless, but planning is everything"<sup>33</sup> – it is the continual engagement in describing the situation, by actors at all levels and functions, that is useful. The descriptions will change as the processes do. Such structured descriptions could anticipate developments and catch potential problems and will be a key basis of solutions or options. They will generate an evolving set of relevant information, among those that need it to plan and act, to apply regularly, in continuous revaluation, refinement and re-design. The richness of the resulting descriptions, if generated collaboratively by all levels will provide information to "move implementation along."

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<sup>33</sup>Eisenhower, D, D 1957 - 235 - Remarks at the National Defense Executive Reserve Conference *November 14, 1957*

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