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Development and Mitigation Futures Conference: MAPS & DDPP Experiences
Paris, France on the 3rd, 4th and 6th of December 2015

An evolving conversation

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Overview

"MAPS & DDPP are looking for the high branches to bring about transformational change towards climate compatible development," stated Sam Bickersteth, CEO of CDKN during the opening speech of the Development and Mitigation Futures Conference. More than 90 experts from the Mitigation Action Plans & Scenarios (MAPS Programme) and the Deep Decarbonization Pathways Project (DDPP) Project communities together with external experts met in Paris. Here they exchanged their experiences over the past three to five years in advancing domestic analyses and agendas in relation to low carbon futures in their respective countries. The event became a space for deep reflection and learning and resulted in a wealth of insights for future work and led to further consolidation and extension of a strong network of experts and practitioners.

Purpose of this document

This document aims to reflect on the Development and Mitigation Futures conference as well as the experiences of MAPS and DDPP, and intends to digest the general learnings from these communities of practice, outline their approaches, both their similarities and differences, and reflect on the value of the conversation that occurred. Importantly the brief aims to highlight the necessity for these processes to continue into the future as well as the value of deepening and building on their respective experiences moving forward.

Introduction to the two projects

DDPP (http://deepdecarbonization.org/) is a collaborative global research initiative seeking to understand how individual countries can transition, on a technological, socio-economic and policy "pathway", to a low-carbon economy consistent with the internationally agreed goal of limiting anthropogenic warming to less than 2 degrees Celsius (2°C). The DDPP consists of domestic scholars from leading research institutions acting independently from their governments and not necessarily representing the official positions of their national governments.

The teams provide, in the form of deep decarbonisation pathways (DDPs), a clear and tangible understanding of what will be required for countries to reduce emissions, consistent with the 2°C limit. The research teams developed these DDPs as blueprints for change, sector by sector and over time, for each country's physical infrastructure—such as power plants, passenger and commercial vehicle fleets, buildings and industrial equipment—to inform decision makers about the technological and cost requirements of different options for meeting the emissions reduction goal. DDPs are not forecasts but "backcasts", a term for the process of defining a desirable future and working backwards to identify the policies and programmes needed to reach that future from the present.

In many countries, the DDP analysis was an iterative process in which researchers gradually increased the depth of emission reductions the countries could achieve by adjusting the assumptions they considered. Country teams autonomously defined

their targets, chose their analytical methods and incorporated into their scenarios, national aspirations for development and economic growth, taking into account national circumstances such as existing infrastructure and natural resource endowments. At the same time, the DDPP is highly collaborative. Country teams transparently shared methods, modelling tools, data and results.

The MAPS Programme (http://www.mapsprogramme.org/) is at its core made up of five national initiatives: the South African Long Term Mitigation Scenarios (LTMS) process in 2005-07, Implicacoes Economicas e Sociales (IES-Brasil) 2013-15 in Brazil, MAPS Chile, 2011-15 in Chile, Planificacion Ante el Cambio Climatico (PlanCC) 2012-15 in Peru, and inputs to the Estrategia Colombiana de Desarrollo Bajo en Carbono (ECDBC) 2010-2015 in Colombia. At the heart of the MAPS experience is the understanding that credible, robust and legitimate evidence is able to influence people to act to bring about change.

Fundamental to this process is the co-production of an evidence base through facilitated collaboration between multi-disciplinary researchers and stakeholders. The locally-led research and process design is based on the specifics of each country, and builds on existing information and tools to enhance the understanding of the implications of low carbon transitions given the country contexts. Securing and maintaining multi-ministerial mandates is central to ensuring country ownership over the processes. Reflecting on action and changing pathways should the current trajectory not be meeting objectives, places emphasis on a learning and evolving approach.

Although framed and designed as a knowledge co-production project, it remains in a highly political environment subject to the mandate and steering from high-level government representatives and the multiple stakeholders. Each national dialogue is conceived as a process of change. The collaborative interaction and reflection praxis among national teams and a core international research team, contributes to an emerging southern body of knowledge to enhance ambitious climate change mitigation that aligns economic development with poverty alleviation.

General learnings

Recognising the advocacy role of the two initiatives, their approaches to responding to, stimulating, catalysing, supporting and accelerating change were discussed. Some main insights and outstanding questions
- Importance of communication and language used; need for positive messages and stories that have a meaning for people as citizens and have an implication for the 'now'. We need to avoid the boring jargon of climate change that is currently dominating communication. We need to acknowledge that 'decarbonisation' is already a mainstream idea (in many countries), so we need to move onto the 'how' rather than getting stuck on the 'why'.

- Diversity and a multi-disciplinary approach need to be embraced – it is not just an engineers' affair.
- Conflict is part of any process of change – key is to be able to anticipate or transform this into opportunities. For this to occur, structured and transparent conversations are needed to identify convergences and divergences between different visions of the transformations. Conscious and skilled process planning and facilitation are a necessity.
- Change is slow, it takes time, but there is little time to shape emissions pathways trends: what are the shortcuts? Build-ups to change are slow but once it is initiated, the actual dynamic change period can be very quick: preparation for the dynamic periods is essential.
- Is "knowledge production & dissemination" the best entry point to our purposes? Is it about convincing people of the benefits of a low carbon transition? Or is it pursuing change 'within' the current systems, beliefs, individuals and power structures?
- We ask ourselves whether policy is responding to science, or rather to public opinion and interest holders? Is there a gap between policy-makers and experts?
- We often experience 'retraction' from the work achieved, so we need continuous presence. How do we institutionalise our communities of practice? What are the key features of the community? Is it innovation? In which case, the institutionalisation needs to ensure this feature.
- What are the best ways to engage interest-holders constructively in the transition to low carbon societies?
- How do you keep momentum with the processes of change that have been initiated for a prolonged time period? How do you assess actual change from an objective standpoint? Could the communities of practice develop "in thinking" over time and how can new, critical, innovative and diverse views continue to be created, supported and used?
- It remains challenging to think 'out-of-the box', think globally (in terms of cooperative approaches at global level and their effect at national-level), unpacking role of technology prospects at national level, consumption patterns. Yesterday's 'out-of-the-box', if successfully developed is now 'in the box'.

Rethinking the current articulation between development and mitigation is a must-do
- Maybe best to avoid 'development' and 'sustainable development' concepts and focus on unpacking 'economic growth' and its relationship to poverty, inequality and well-being. Or maybe its best to rely on the central MAPS and DDPP country-driven processes where country stakeholders and country experts develop, determine and express their dynamic and developing priorities and analyses, to contribute to a rich diverse conversation, not dominated by any single metric or concept or concepts.
- MAPS research work has shown a gap between theory and practice, namely a mismatch between some dominant linear planning, thinking and analysis

approaches to the complex and systemic nature of the 'real world' change as explored in the wealth of implementation literature (http://www.mapsprogramme.org/wp-content/uploads/Paper_Implementing-climate-change-mitigation-a-journey-into-the-unknown-1.pdf).

- Technologies to be perceived as providers of social services. A dashboard such as the one developed under DDPP is a useful way to identify central and concrete dimensions of energy systems and the economy and focus on the crucial indicators that can make 'mitigation' and 'development' talk to each other.
- Institutional analysis is often under-resourced or avoided owing to various political or other challenges, although it is a crucial dimension to understand the requirements in the 'real world' for near-term action. There is a need to add a near-term component to the focus on a purely long-term perspective, to put the emphasis on the transition processes, i.e. the near-term action needed to set in motion the "desirable" long-term futures.
- People do not typically want to completely change lifestyle or lifestyle aspirations that are involved with lower carbon: do we understand 'what' would it be possible to change with low resistance? And do we understand which are the high resistance areas and what would be the consequences if these are not addressed in the near term?
- At national level, how do we understand and internalise competitiveness considerations in our analyses?
- More efforts are needed to use alternatives to GDP, or augment pure growth metrics, and integrate these into our current tools and models.

Dealing with uncertainties is a great challenge
- If we become very scientific about uncertainties though, we need to bear in mind the risk of quantifying probabilities of scenarios – i.e. scenarios are not forecasts
- Scenarios (and models supporting them) should not be conceived as providing definite answers to policy questions; they are useful to provide the crucial information for policy analysis in terms of i) developing the boundaries of the storylines ii) identifying the dimensions for discussions within these boundaries, and iii) revealing the intended and unintended consequences.
- The importance of 'learning by doing' (continuous reflection of the problem we have at hand – the learning process) rather than providing the purest certainty by quantification of uncertainties and the rest. This cannot be underestimated.
- Do we need to control/manage uncertainties, or just to acknowledge them, be aware of them and work with them? Or, as before, is it the judicious identification of where uncertainties lie, when they can be lived-with, reduced, managed or simply be kept within the conversation where relevant. It is important that the insistence by some that uncertainties are

unacceptable, not be allowed to paralyse progress. Doing nothing presents its own special uncertainties and high-risks.

Tools & methods

- The purpose of tools, needs to drive their choice and utilisation. Much can be done without large, complex, resource-intensive tools. Similarly, more complex tools do not necessarily lead to solutions of complex problems.
- A trade-off always exists between complexity and simplicity. Simple, transparent tools are actually better in many instances than complex ones, such as complete system dynamic frameworks. Many mathematical models we use are complex and rich in data, but we see a place for « simple but not simplistic » models.
- As for MAPS experience, data needs and availability of skills will be the main driver of tools selection if local capacity needs to be strengthened.
- As from DDPP experience, the use of common reporting template across different teams is a way to implement knowledge sharing and facilitate the learning process.
- From an engineering perspective, one could say it is always possible… it is a matter of how much will it cost and who will pay for it. Do we represent the finance options properly in our models?
- Where we have a good understanding of technologies needed – how do we match investment flows now? And more generally, how do we map the global enabling conditions for the possible transformations to actually happen?
- Understanding properly sequencing options, and their pros and cons, remains a challenge. The approach of time is a challenge per se, since optimisation principles, conventionally used in the mainstream literature, are not relevant for many of the issues we consider, given the level of uncertainties and the multiplicity of policy objectives
- Our greatest problem is the data, not the models. Model development is time- and resource-intensive, and a number of trade-offs need to be made. For example, on IMACLIM-BR development, a choice was made between disaggregating industry and income-levels – these choice need to be well informed according to the priority of policy questions to be addressed.
- There seems to be a gap: regional-scale modelling – i.e. which may be relevant to certain countries in the South.
- On-going challenges with economic modelling: represent market imperfection (unemployment); data for income-distribution analysis; informed structural changes (i.e. where does growth go? alternatives to GDP indicators); finance evaluation and saving capacity of a country; public sector funds management and representation; inclusion of health and crime.

Thinking of implementation

- In the end, policy-relevance is about migrating from policy to implementation. Are we any closer? Policy and implementation are

inextricably linked and policy and implementation communities need to collaborate for an on-going process that is ever-developing.

- MAPS & DDPP are about informing the formulation of policy based on evidence. Informing implementation of policy – is it based on the same piece of evidence? (Evidence is not separate from policy and implementation – it informs and is informed by and develops in conjunction with these policy-development-and-implementation processes.)
- How to integrate political economy considerations in our work?

MAPS & DDPP: Logics, differences and complementarities

Logics

The two initiatives focus on policy-relevant knowledge production and dissemination, and started from the common acknowledgment that the national level is the relevant scale of analysis for development and mitigation issues, for the purpose of our work. This approach has notably been established as the framing of international negotiations on climate change since the 2009 Copenhagen conference and in the lead-up to the COP-21 Paris conference. The common approach suggests considering the long term in order to be able to inform the short-term priorities. Both came to the conclusion that providing a time perspective would facilitate mind-opening within targeted audiences.

Both initiatives aim at building trust; both by providing best information with excellent researchers and optimised transparency; and in MAPS particularly, by creating a stakeholder dialogue to listen and answer in an open safe space and in so doing co-produce the information.

Expertise to consistently investigate the articulation between development and climate mitigation questions was poorly understood in practice before, but emerged as a result of the processes.

Interaction between country teams played important roles in both initiatives in a collaborative approach seeking to favour innovation, knowledge sharing and learning processes among the teams, and the establishment of robust communities of practice.

Both projects are model-agnostic in the sense that they do not favour a specific type of modelling approach; but they also both provide quantitative and qualitative assessments of the transformations analysed.

Differences and complementarities

Rationale
- The consensus building stakeholder approach shaped the MAPS country processes, their evolutions and outputs. The scenarios co-developed between stakeholders and experts were independent at country-level, shaped by the specificities of each context with no overarching internationally-driven principle. MAPS was designed with a focus on domestic policy-making.
- DDPP focused on building evidence for ambitious targets from expert assessments without needing to gain consensus. Although reflecting the national circumstances, including assessed political and institutional aspects in addition to the techno-economic focus; the national scenarios were framed by common benchmarks capturing the common endeavour towards the 2°C limit.

Approach to policy processes
- Fundamental to the design of MAPS was securing of official mandates to support and endorse the processes and create high level political ownership
- Core to the DDPP approach was the independence of the processes, conducted solely as academic analyses to be used as information to frame, inform and influence decision making processes

The role of assessment tools
- Core to MAPS is the development of modelling tools in a capacity building approach, in order to enable the quantification of the national-scale scenarios. Through these processes MAPS endeavoured to generate information and tools that did not exist before in the countries, as well as develop new ways of working which incorporate new skills and capabilities and are a product of newly established communities of practice.
- The DDPP teams used the models at their disposal prior to the project (with some country teams performing significant extensions), but adopted a common reporting template to enable comparison and benchmarking

Methodological approach
- Agreeing on a vision first (back casting) or not (forecasting)
- Long-term (2050) vs medium-term (2030)
- Techno-economic feasibility which included an assessment by experts of what was realistically achievable vs assessment of realistic feasibility in a stakeholder process which unavoidably involved some parties pushing for their own interests

- No reference case used in DDPP which was a key innovation given the dominance of reference case thinking in the mitigation communities vs. explicit reference case in MAPS

Nature of collaborations among country teams
- MAPS core country teams interactions focused on technical aspects like model development, ways to approach certain common questions like co-benefits, implementation considerations and process elements for stakeholder engagement;
- DDPP country team interaction was centred on pushing boundaries of the potential for national transformations through comparison and benchmarking enabled by international meetings of country-experts, key information sharing and a common reporting template

Countries covered
- MAPS focussed on co-producing evidence for informing low carbon futures through intensive stakeholder processes in 5 developing countries. The country processes have built capacity for new ways of working and out of this experience and collaboration developed a Southern community of practice.
- The DDPP through the objective to address the global-scale 2°C issues had to involve a larger collective of 16 countries to represent the major emitters and demonstrate the challenge of deep decarbonisation at scale. The countries are both developed and emerging economies.

Moving forward

The work conducted so far in both initiatives has built distinct identities, with specific rationales, methods and usages that pertain to each project. DDPP provides a provocative case for ambition according to an expert-based approach; MAPS creates space for dialogue, and consensus building in the cogeneration of the evidence to enhance ownership. The success and impact of these projects has clearly demonstrated the need for both these analyses to continue on their own tracks in the future to reinforce the robustness of the methods, extend their coverage and disseminate the distinct features they can provide to the policy debates.

The conversation between the two projects showed that there is important complementarity and also that that some of the strengths of one project are some of the weaknesses of the other. In particular, in the policy engagement process, the consensus building and mandated approach in MAPS as well as the co-production of robust evidence developed promotes strong ownership, but with a risk of limited ambition in analytical results; on the contrary, the normative approach in DDPP ensures high ambition, but does not seek ownership by decision markers. Therefore, it appears that further collaboration and joint engagement could presumably help provide a relevant basis for policy engagement, where MAPS could bring its

experience of supporting stakeholders' debates and DDPP use its method to provide scenario benchmarks to ensure that the collaboration, and retention of the complimentary approaches and features, supports the multiple challenges of achieving the ambitious outcomes required to be consistent with 2°C or lower.

Some areas of collaboration should also be developed to build on the common lessons of the exercises. This concerns notably the global enabling conditions that remain represented as the boundary conditions of the national-scale analysis conducted in MAPS and DDPP, but call for a design of global systems that responds to the specific requirements and questions posed by national-scale transformations. This is not only a matter of consistency with the global goals, but also the only way to provide concrete elements for the design and implementation of the global-scale mechanisms.

The national-scale of analysis would benefit from a more in-depth investigation of subnational levels, notably at the city scale. The national and urban scales are indeed not independent and should be approached in an integrated manner: i) the urban studies need to be put in a national context so that local trends reflect the national transition (e.g. urbanisation rates and structure), and ii) conversely, the city-scale analysis helps to question the way national transformations are built and territorialised, by making explicit the potential evolutions of important drivers of country-scale pathways. But the analysis of long-term transformations at the city level is not a simple copy-and-paste of what has been done in DDPP and MAPS at the national level, but requires an explicit representation of the services provided by the city, which are conventionally simplified in a national vision.

MAPS and DDPP are initiatives that were considered under Horizon 3 (this represents a future time horizon predominantly based on untested blue sky concepts) by the time they were conceived. There is an expectation that these types of initiatives will gradually become standard practices across countries, and the teams engaged so far can play an all-important role by sharing the know-how acquired to date. So the MAPS and DDPP community of practice gathered in Paris put the question forward on how to continue building bridges between H3 and H1 (this process refers to the process of moving a future blue skies concept to a point at which it becomes incorporated in current business as usual practices), and even how to use the established processes and tools to track progress on current commitments, such as the implementation of the INDC. Most challenging, the on-going conversation is 'what is the next work to be done to remain in H3 space, pushing the borders?'