A Learning Experience:
integrating theory and practice for the implementation of INDCs

Thinkpiece by Florian Mersmann and Hendrikje Reich

Outline

A major cornerstone on the way to low-carbon sustainable development on a global scale will be a swift and effective implementation of all countries' INDCs submitted to the UNFCCC prior to Paris. However, doing so will require transforming development pathways away from currently pervasive carbon lock-ins. This can only be successful if countries take a systemic view on their development agendas, and link mitigation, adaptation and other developmental priorities together for a coherent overarching sustainable development strategy. The ownership for this process needs to be with the countries themselves, as such strategies touch fundamentally upon national policy-making and implementation. At the same time, developing countries have access to bi- and multilateral financial and technical cooperation. To enable a systemic, country-led perspective, development cooperation needs to shift current paradigms away from currently prevalent project-level interventions.

A truly innovative and transformational shift with the objective of pursuing a low-carbon and climate resilient society needs to open up space for experimentation as new ways of doing things need to be put into practice. Experiments will not always be successful, but foster learning on a national as well as an international level on pitfalls and solutions in new approaches to low-carbon sustainable development. Not least, there needs to be a renewed focus on programmatic approaches that link various topical domains for a country-led process, and a critical look at development work that is "doomed to succeed".

This thinkpiece draws from systems theory, development studies and recent work on transitions studies and transformational change in the international domain. It links up different theoretical concepts with practical approaches in order to outline a future development agenda that will be owned by developing countries and supported non-invasively by bi- and multilateral development cooperation to foster low-carbon development pathways that are urgently needed to solve the climate crisis.

INDCs: new perspectives on climate policies?

Intended Nationally Determined Contributions (INDCs) form one of the cornerstones of the successful result of the Paris Conference. There can be no doubt that the (as of now) 161 submitted INDCs representing 189 countries give a clear signal that across the globe, climate change has been recognised as a serious issue in need of solving.

With INDCs, the international climate regime has moved further away from a Kyoto-style, top-down system with globally-defined goals. INDCs have been developed according to national circumstances, and without (however defined) equity-sharing of efforts to reach a global goal in mind. As a result, the current emissions pathway resulting from full INDC implementation is still closer to a 3°C warming scenario, and thus quite far away from the 1.5-2°C goal that the UNFCCC itself envisions.

However, INDCs have a number of potential advantages over Kyoto-style targets. Their development has brought many countries to take closer looks at potentials and options they have for greenhouse gas mitigation, and have fostered communication between different line ministries, as well as with different stakeholders. This may greatly improve the potential for actual implementation of activities set forth within the INDCs, as they represent a much higher national ownership than targets defined on an international level. Through the development of INDCs on a national level, there is also a much greater potential for learning effects within countries through communication of possible mitigation activities, as well as through the actual implementation stage which will uncover possible pitfalls, but also other opportunities for more ambitious action.

In fact this will be greatly needed, as the Paris Agreement has introduced a ratchet-up mechanism in order to regularly strengthen the ambition of national efforts. It can be expected that the global stocktakes every five years, in which countries will need to showcase their level of implementation and more ambitious targets, create considerable (peer) pressure to comply, even in the absence of a formal compliance mechanism. But it can also help to foster learning across countries, as a continuous implementation of mitigation activities provide the basis for a large knowledge base for successful action. While it may be expected that there will be a continuous exchange of knowledge and capacities through bilateral cooperation, the global stocktakes can create "dew points" to share such knowledge across countries, and discuss improvements.

However, given the level of ambition needed to achieve the 1.5-2°C-mark in order to prevent dangerous climate change, the current pace of policy and action improvements

will not suffice. As a recent report by NewClimate Institute, "Challenges and lessons learned in the preparation of Intended Nationally Determined Contributions" (Kurdziel et al. 2015) found, a majority of INDCs do not define significantly deeper emission cuts than what has been already agreed in the countries themselves. Furthermore, more than half of the submissions analysed were highly sector-specific, often focusing on one particular sector.

Transformational change is needed

In most instances, this will mean that much greater emphasis needs to be put on integrating climate strategies with economic and industrial development as is currently the case, with an aim to shift away from current developments that lock in high-carbon infrastructures and behavioural patterns towards a sustainable low-carbon, climate-resilient paradigm.

For non-industrialised countries, funding needs to be prioritised to make such a development pathway a preferred option. This has consequences for the development of programmes and projects, but also for financial support: calling for a higher level of ambition in developing countries means that levels of funding need to shift to higher ambition levels as well. This conviction drove the decision to implement the Green Climate Fund (GCF) of the UNFCCC and other climate finance instruments such as the British-German NAMA Facility.

Scholars and practitioners alike are now calling for climate and development activities to be transformational, but there seems to be a looming gap in understanding what this may actually mean. While science is offering a number of theoretical in-roads defining transition, transformation or paradigm shift, it has so far had limited success in operationalizing these concepts in a manner suitable for climate and development practice. Still, we believe that these theoretical concepts can have a bearing on how to define implementable strategies that foster sustainable, low carbon development in a transformative manner.

Learning from theory: Sustainability Transitions

Researchers within the Knowledge network on System Innovations and Transitions (KSI) have laid the foundation for a common research agenda on socio-technical transitions. A transition in their sense is a change process in socio-technical systems, defined as *"a configuration of elements that include technology, policy, markets, consumer practices, infrastructure, cultural meaning and scientific knowledge"* (Geels and Kemp 2012). It bears noting that within this particular research field, the terms "transition" and "transformation" are widely used interchangeably.

Geels and Schot (2010) have characterised transitions as

- co-evolutionary processes requiring multiple changes in socio-technical systems;
- the results of economic, cultural, technological, ecological and institutional developments;
- multi-actor processes involving interactions among civil society, business, government, the scientific community and all other groups concerned;
- radical scopes of change in systems or their configurations that may be sudden or slow;
- long-term processes of often more than a generation; and
- macroscopic change involving whole organisational fields (Geels and Schot 2010)

Strikingly, these characteristics point to transformational change as a multi-dimensional process that fundamentally alters a society at a deep, systemic level.

Due to the complexity of such multi-dimensional processes, direct planning and subsequent steering of transformational change processes will not be possible (Mersmann et al. 2014). However, a large branch of transition science has evolved to strategically develop and manage conditions that increase the chances to induce transformational processes through innovation in niches, and governance to induce transformational change (see e.g. (Rotmans et al. 2001), (Meadowcroft 2009), (Grin, Rotmans, and Schot 2010), (Geels and Kemp 2012)).

Transition management approaches emphasize the importance of developing a vision of a changed future in key stakeholder groups, and of experimenting with a portfolio of approaches to bring about the envisioned change in protected spaces (Kemp and Loorbach 2006; Meadowcroft 2009). Importantly, these approaches explicitly allow for some leeway and failure for promising, but untested approaches. This puts them into contrast with more traditional policy planning, but also with established approaches to

development assistance, which widely relies on logical framework approaches with predefined outcomes and impacts, and habeen criticised for being preemptive and rigid (Boodoo and Mersmann, forthcoming).

Incorporating transition management elements into implementation activities for transformational climate and development strategies may therefore be a promising avenue to foster the multi-dimensional change needed for sustainable low-carbon pathways.

In particular, a portfolio approach to test novel approaches that are promising, but untested may find at least a limited use in countries willing to pioneer transformational change. However, this would also require international and bilateral finance organisations to rethink their funding preferences. As a rule, financing organisations are highly risk-averse, which lets them shy away from untested approaches. It bears noting that discussions within the Green Climate Fund are ongoing on the possibility to introduce a risk capital portion to their funding.

Strong stakeholder integration at all levels is certainly key to a successful implementation of sustainable low-carbon development. Not every member of a society will profit in the same way from a shift towards a low-carbon paradigm and often those that stand to lose most have a strong voice (Geels 2014). Integrating a wide stakeholder group may lower resistance to change by providing information, and demonstrating opportunities how to profit from the transformational processes.

Stakeholder involvement processes can admittedly not ensure that all voices are heard, and that transformational impacts are achieved in spite of incumbent actors' interests. Again, portfolio approaches could ameliorate this to a certain extent, as a wider base of activities would also mean a wider spread of actors' interests and possibilities for benefit.

Finally, country representatives as well as donors need to be aware that transformational change is a long-term process and initial successes or perceived failures are not an appropriate criterion with respect to the overall transformation process. Interventions must be given time to develop impacts. This is a serious challenge to those who are being held accountable by the public. However, without long-term commitments to funding and implementation, there is a high risk that interventions supporting transformational processes will stall prematurely because they are not able to sustain themselves in the short term.

Learning from practice: LEDS for INDC implementation

The idea of integrated country strategies that combine climate and sustainable development is certainly not new. The concept of low-emission development strategies (LEDS) or low-carbon development strategies (LCDS) date back to the UNFCCC negotiations in 2008, and can certainly be traced back even further under other names.

Generally, LEDS are characterised as (Levin & Balasubramania, 2012):

- country-driven;
- building upon existing national plans and strategies – not an imposed requirement;
- framed in terms of development – positive impact on jobs, manufacture/export, competitiveness, health, energy security etc.
- supporting both mitigation and adaptation processes;
- a transparent, inclusive decision-making process;
- related to capacity building in specific sectors.

With these attributes, LEDS fit well conceptually with the propositions made in the previous chapter. Equally importantly, they also provide a means to integrate INDCs as part of a larger strategy. Many INDCs focus strongly on greenhouse gas reductions, and specific sectors where these reductions should be yielded. As such, they tend to have a narrow focus on climate topics. However, their implementation, especially in developing countries, will depend heavily on benefits that are not directly climate-related, such as job creation, health benefits, and economic incentives. In other words, the implementation of low-carbon measures is not necessarily just a question of climate protection with the goal to showcase a country's contribution to global mitigation efforts. Instead, its success hinges upon the benefits to sustainable development on the national level. While it can be expected that most mitigation measures have significant impacts on a country's socio-economic development (and not all of them positive!), Kurdziel et al. (2015) found that "the majority of countries traditionally do not consider a comprehensive analysis when planning for climate change mitigation" (Kurdziel et al. 2015, see also Day et al. 2015).

In order to arrive at truly low-carbon development pathways, future national targets will need to focus on the whole economy, as encouraged in Article 4 of the Paris Agreement. By integrating INDCs into existing LEDS, or by developing new LEDS by combining a country's INDC with development strategies that are most likely already in place, a country could significantly strengthen the acceptance of climate mitigation

measures, but could also help to weed out measures that have a highly negative impact on sustainable development.

Furthermore, a stronger integration of climate mitigation/adaptation with wider sustainable development strategies can foster cooperation across sectoral borders by identifying programmatic approaches that connect climate-friendly approaches both in sectors more traditionally conducive to climate policies, such as the energy sector, with others that are less prominent in that field, such as health or education. Cooperation between unlikely fields often leads to innovative approaches that prove transformative for an economy.

Outlook

This short piece outlines a research agenda that is urgently needed in order to ensure that the INDCs lead to a transformation towards sustainable low-carbon, climate resilient economies and societies capable to learn quickly and efficiently, so that the level of ambition is raised far beyond the currently unsustainable global emissions pathway.

Of course such a vision will not come free of charge. Industrialised countries will have to take the lead in implementing, integrating and ramping up their INDCs for the first global stocktake and beyond, but also provide the means of implementation for developing countries. Financial and technical assistance as well as capacity building initiatives and development cooperation will have to provide the resources for developing countries to avoid high-carbon lock-in and instead embark on a sustainable low-carbon development pathway.

Conceptually, both theories on sustainability transitions as well as practical concepts such as LEDS can provide important building blocks for more integrated approaches to development planning. We firmly believe that sustainable development will crucially depend on a look across sectoral and topical borders, and hope that we in the future, we will see an uptake of systemic country strategies both in developing and developed countries.

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