'Climate Compatible Development: Pathway or Pipedream?'

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Summary

The lecture addresses the challenges posed by 'climate compatible development'. Is there a clear pathway to 'zero-zero' – eradicating poverty and simultaneously saving the planet? Or are the trade-offs and competing interests such that this is a pipedream?

The adoption of the new Sustainable Development Goals and the Paris agreement on climate change together pose a transformational challenge. This is so despite the fact that the concrete mitigation commitments made by countries in Paris amount to only about a quarter of those needed by 2030. In the longer-term, much more radical cuts will be needed, leading to complete elimination of CO2 by 2070, and of other greenhouse gases well before the end of the century.

Climate compatible development offers a framework for thinking about the pathway for dealing with changes on this scale, while simultaneously achieving the poverty reduction and other targets embedded in the SDGs. Climate Compatible Development emphasises mitigation and adaptation within countries, but also the impact on individual countries of transformation in the wider global economy. In this context, innovation becomes a key concept, and competitiveness an essential tool.

Theoretical pathways to zero-zero are well-established, and appear particularly attractive when co-benefits like improved air quality or lower congestion are taken into account. However, the transition pathway is not friction-free. Three elements need to be assembled: policy leadership; policy design; and policy implementation.

The many issues raised by climate compatible development are familiar to development studies. Future work on climate and development must be informed by the lessons of past development research and policy-making; and must build on the values held by those working in the field.

1. Introduction: why think-tanks matter

It is an honour and a pleasure to be asked to deliver this Anniversary Lecture at the Centre for Policy Dialogue – and to have the opportunity to speak about climate compatible development. This is partly because it enables me to pay tribute to the work of CPD, and also to recognise the leadership role that Bangladesh has played on climate change.

I will return at the end of this lecture to values, and will have something to say about the importance to society in general of open, honest, well-informed and widely-owned policy dialogue. CPD has championed this perspective throughout its more than twenty-year history, and has done so at home in Bangladesh, but also internationally. Truly, CPD has local roots and global reach. It is not for me to comment on CPD's impact in Bangladesh. Globally, however, I think particularly of CPD's work on the international economy and on trade, especially its work on Least Developed Countries; and also of its recent contributions, through Southern Voice, on the framing of the Sustainable Development Goals. CPD has benefited

[1] Paper prepared for the Anniversary Lecture at the Centre for Policy Dialogue, Dhaka, Bangladesh, January 2015. Responsibility is the author's.

from inspiring leadership and I should like to recognise especially the roles of Rehman Sobhan, Debapriya Bhattacharya and Mustafizur Rahman.

CPD has a programme on climate change, and has contributed to Bangladesh's leadership role in the field. Bangladesh has focused very much on the impacts of climate change. It has championed the importance of vulnerability, played a leadership role in the Climate Vulnerability Forum, influenced the spending priorities of the Green Climate Fund, helped ensure the prominence of adaptation issues in national climate pledges, and helped drive the ambition of the Paris agreement.

There are lessons to draw from these experiences. When research influences policy, there is more in play than the originality and respectability of the research. In my own experience of working in the world of think-tanks, researchers succeed when they explicitly build bridges to the world of policy: telling good stories; building strong networks; focusing on the practicality of their recommendations; and thinking politically about the context and timing of their interventions. Internationally, think-tanks can influence the global agenda when they work together across national borders, a process I have described as 'policy code-sharing'.

CPD exemplifies best practice among think-tanks. Bangladesh can be proud of having fostered such an institution.

2. The new Sustainable Development Goals and the Paris agreement on climate change present a 'wicked problem' for researchers and policy-makers

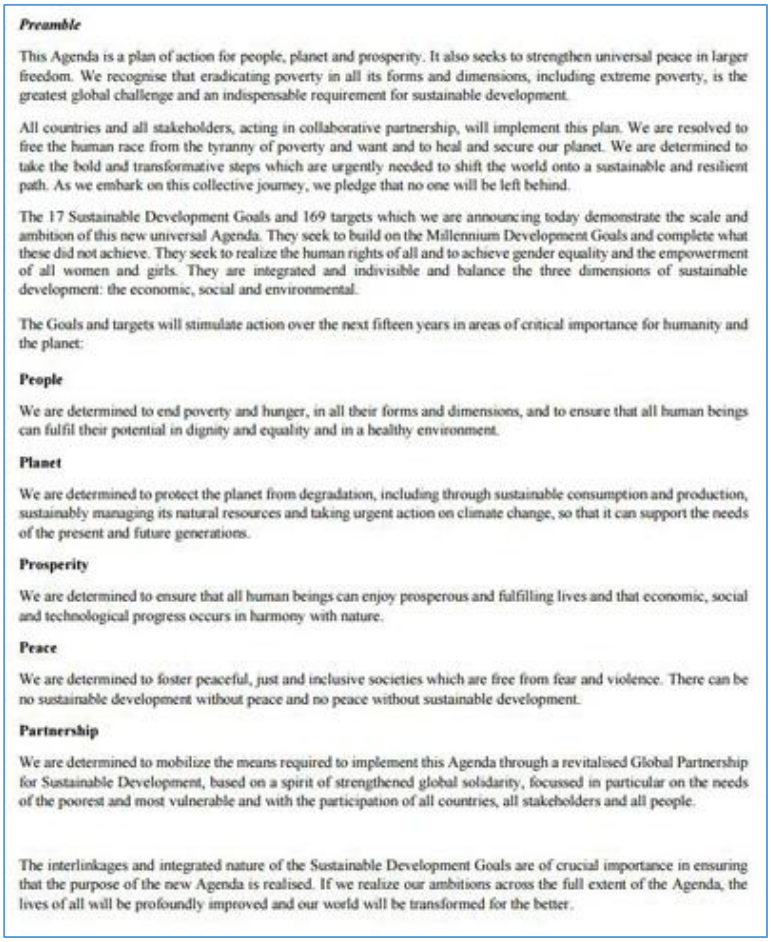
2015 was a year of sometimes frenzied international activity, including the Financing for Development Conference, held in Addis Ababa in July, and the WTO Ministerial, held in Nairobi in December. Two processes and meetings stood out, however: the Sustainable Development Goals to 2030, agreed by the UN General Assembly in September, and the agreement on climate change, agreed in Paris in early December. Neither is perfect, but both are important – and together they set the stage for a remarkable transformation in the global trajectory.

The Sustainable Development Goals

The SDG Framework, approved at the New York Summit in September 2015, is valuable for three reasons. First, it explicitly links economic, social and environmental issues in its comprehensive list of 17 Goals and 169 Targets. Second, it is explicitly universal, applying to all countries everywhere and not just to those labelled 'developing'. And third, it represents consensus among many stakeholders from the official and non-official sectors: NGOs and the private sector, as well as Governments.

The final text of the SDG Declaration, 'Transforming our World: the 2030 Agenda for Sustainable Development' is notable for the Preamble, the 17 Goals and the 169 targets. The Preamble (Figure 1) captures the essence of the document, emphasising the interconnectedness of economic, social and environmental goals (the five 'Ps' – people, planet, prosperity, peace and partnership) and the fact that the agenda is universal, applying to all countries of the world. We are encouraged to refer to the SDGs as the new Global Goals (see Figure 2).

Figure 1
Preamble to the SDG Declaration



Preamble

This Agenda is a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom. We recognise that eradicating poverty in all its forms and dimensions, including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development.

All countries and all stakeholders, acting in collaborative partnership, will implement this plan. We are resolved to free the human race from the tyranny of poverty and want and to heal and secure our planet. We are determined to take the bold and transformative steps which are urgently needed to shift the world onto a sustainable and resilient path. As we embark on this collective journey, we pledge that no one will be left behind.

The 17 Sustainable Development Goals and 169 targets which we are announcing today demonstrate the scale and ambition of this new universal Agenda. They seek to build on the Millennium Development Goals and complete what these did not achieve. They seek to realize the human rights of all and to achieve gender equality and the empowerment of all women and girls. They are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental.

The Goals and targets will stimulate action over the next fifteen years in areas of critical importance for humanity and the planet:

People

We are determined to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment.

Planet

We are determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations.

Prosperity

We are determined to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature.

Peace

We are determined to foster peaceful, just and inclusive societies which are free from fear and violence. There can be no sustainable development without peace and no peace without sustainable development.

Partnership

We are determined to mobilize the means required to implement this Agenda through a revitalised Global Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focussed in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people.

The interlinkages and integrated nature of the Sustainable Development Goals are of crucial importance in ensuring that the purpose of the new Agenda is realised. If we realize our ambitions across the full extent of the Agenda, the lives of all will be profoundly improved and our world will be transformed for the better.

Source:
https://sustainabledevelopment.un.org/content/documents/7891TRANSFORMING%20OUR%20WORLD.pdf

Figure 2

The new Global Goals

Source: http://www.globalgoals.org/

The Declaration has been welcomed as wide-ranging, ambitious and the product of intensive consultation and participation. At the same time, it has also been criticised for being too wide-ranging and too ambitious, and with too great a commitment to consensus.

It is easy to be irritated by the failure to distinguish ends and means in the 17 Goals and 169 Targets, sceptical about the feasibility of some individual targets, and disappointed by the paucity of work on sequencing and trade-offs. It is no secret that some would have preferred a shorter and tighter framework, of the kind laid out in the Report of the High Level Panel on Post 2015, co-chaired by David Cameron.

The escape hatch is the wording in the document that says the SDGs will be global in scope, but that individual countries will shape their own programmes. This is best expressed in Para 21, which says

'. . . All of us will work to implement the Agenda within our own countries and at the regional and global levels, taking into account different national realities, capacities and levels of development and respecting national policies and priorities We will respect national policy space for sustained, inclusive and sustainable economic growth, in particular for developing states, while remaining consistent with relevant international rules and commitments.'

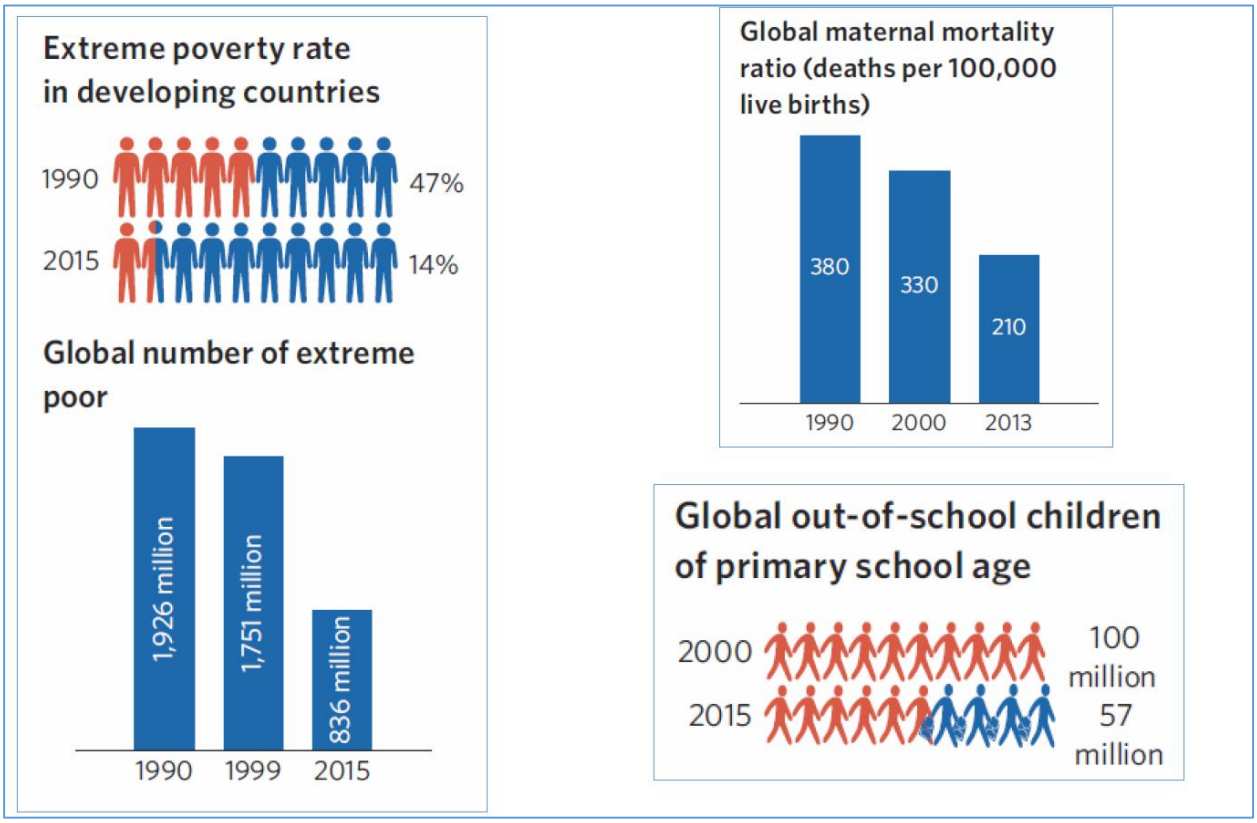
This makes the global SDGs aspirational, a guiding normative framework rather than a foundation of action. Charles Kenny has made a similar point, calling the SDG framework no more than (and no less than) a document which 'provides an authorising environment'.

It goes without saying that there is a great deal to do if poverty and hunger are to be eliminated to be eliminated by 2020. As the latest MDG progress report, issued by the UN, makes clear, over 800 million people still live in absolute poverty, representing 14% of the

population of the developing world. Over 160 million children, a quarter of the total, are stunted by malnutrition. Over 57 million children are out of school. Nearly 300,000 women die in childbirth. (Figure 3). These figures may be underestimated, owing to the paucity of data from some very poor and conflict-affected countries.

Figure 3

Progress and outstanding challenge on some MDGs



Source:
http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf

A key challenge will be how national politicians, developed and developing, benefit from an inspiring and comprehensive global vision, but also retain control and ownership of the agenda.

The Paris agreement on climate change

The Paris agreement also represented a major landmark: not enough on its own to end climate change, but a strong signal, probably stronger than expected, and a very good start. The global agreement offers an ambitious long-term goal, universal commitments, regular

review, and a raft of necessary instruments, including commitment to finance from developed countries for both mitigation and adaptation. Further, the participation and commitments of many non-state actors in Paris, including cities and the private sector, augured well for rapid technical and institutional innovation, and thus over-delivery on the agreed targets. In the end, the diplomatic process fulfilled its principal function, bringing all countries together in shared recognition that 'something must be done'.

At the heart of the Paris agreement lies the long-term mitigation objective in Article 2, reproduced in Figure 4. Underpinning this was some hard negotiation, especially on the inclusion of a 1.5 degree target, and also the momentum imparted by specific pledges by 186 countries, in the form of voluntary 'Intended Nationally Determined Contributions'.

Figure 4

The mitigation target in the Paris agreement on climate change

Article 2

1. This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:

(a) Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;

(b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production;

(c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development.

2. This Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

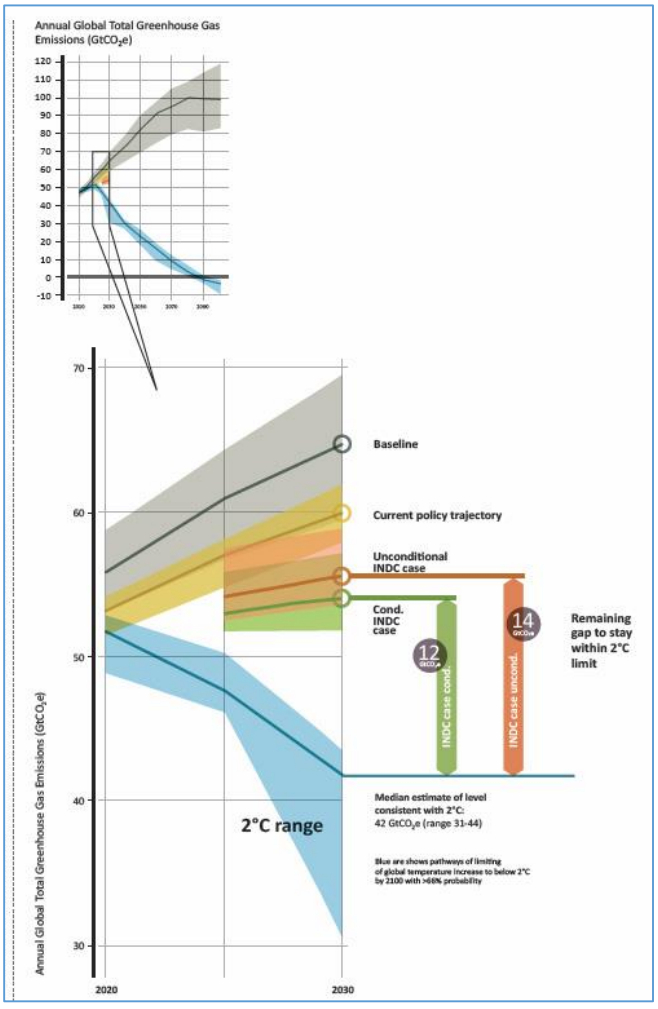
Source: http://www.cop21.gouv.fr/wp-content/uploads/2015/12/l09r01.pdf

In this sphere also, there is much to do. First, for all the fanfare, the Paris agreement is alarmingly modest. Adding up all the national commitments, the INDCs, shows that the world has so far formally committed to only a quarter or a third of the emission reductions needed by 2030 to achieve 2 degrees, let alone 1.5. The UNEP Emissions Gap Report makes the point with chilling clarity. UNEP show that likely emissions on the current trajectory before INDCs amounted to about 60Gt in 2030, and that the level needed to keep the world on a least-cost path to 2 degrees is 42Gt in 2030. If all unconditional INDCs are implemented, the expected level of emissions in 2030 is 56 Gt; the figure might be 54 Gt if conditional INDCs are fully implemented. That means INDCs have 'filled' 22-33% of the gap that existed before the process began. See Figure 5.

It is clear that some countries have done their share and many have not. The Climate Action Tracker shows that some countries have qualified as the 'poster children' of the moment: Bhutan, Costa Rica and Ethiopia are often mentioned. Others, however, have done too little: the CAT league table has 13 countries rated as 'inadequate' among those it assessed, including Australia, Canada and Japan, as well as several emerging economies.

Figure 5

The Emissions Gap



Source: http://uneplive.unep.org/media/docs/theme/13/EGR%202015_Technical%20Report.pdf

The temperature rise implied by the conditional and unconditional INDCs submitted is that there is a two thirds chance of warming being held to 3 – 3.5 degrees. If only unconditional pledges are considered, the figure could be as high as 4 degrees. It is not surprising that scientists continue to warn that much more needs to be done in the future.

There is a large amount of action being generated by various non-state actors, including cities, groupings representing sectors like cement, and private sector companies. These may, but may not, reduce emissions further: it is not clear how far such initiatives have already been factored into

national INDCs. For the period to 2020, a degree of additionality is expected over and above current pledges, perhaps as much as 70 per cent. This could contribute up to a further 2 GT of emissions reduction in that year. No analysis is available yet for the period after 2020. There were, however, astonishing numbers of events and announcements in Paris, including big contributions to renewable energy in general, for example the Breakthrough Energy Coalition, supported by Bill Gates and Mark Zuckerberg, among others; and the roll-out of solar in particular, including the solar initiative launched by Narendra Modi from India.

An optimistic take on the figures would be to say that the level of international cooperation represented by INDCs covering 186 countries is unprecedented, and that significant reductions will follow. Many countries will have pledged conservatively, so with luck will exceed their commitments. Further, the contribution of non-state actors may prove to be greater and more 'additional' than presently thought. There are many technological and policy options in the toolbox or in the pipeline, so there is still time to bend the curve further towards 42Gt in 2030.

A wicked problem?

The adoption of the SDGs and the finalisation of the COP together highlight the urgency of a new approach and open a new chapter. Achieving the SDGs will require close integration of poverty, environmental and social action, well captured by the idea of 'zero-zero': zero poverty by 2030 and zero net emissions of CO2 by about 2070. 'Deep decarbonisation' will be required in all countries and all sectors. Furthermore, whatever the pace of change with respect to emissions, current warming will increase the frequency and intensity of extreme weather events. That means resilience, disaster risk management and social protection will grow in importance.

The new agenda brings to the foreground an issue that would anyway become evident even if the goals had not been formulated in the way they have – namely that it will not be enough just to carry on with business as usual. Transformation will be required, with large scale and often unanticipated adjustments required.

It is worth remembering in this context that new approaches and trajectories need to be integrated into the transformations that accompany development, with or without climate change: changing demographics, urbanisation, inter-sectoral shifts, integration into the world economy, and the management of financial and trade shocks.

Some see complementarities, pointing to the win-win benefits of combining climate action with poverty reduction. ODI's zero-zero work emphasises this point, making use of analysis on the new climate economy by the Global Commission on the Economy and Climate. There is emphasis in this work also on co-benefits like reduced air pollution. But is it not reasonable to ask how we are going to handle the disruption that lies ahead, and the political problems likely to be associated with what Schumpeter calls 'creative destruction'? We are left with the questions of who gains and who loses, whose interests dominate, and how the major transformations implied by zero-zero will be handled.

In tackling these questions, the key issue for the future is mainstreaming. Every country will need to mainstream climate compatible development. Practically, there will be many specifics. From a longer list, we might think of the following priorities:

a. Delivering sustainable energy and energy services at scale.

b. Building sustainable cities in an urbanising world.

c. Decarbonisation of agriculture.

d. Industrial policy, and especially the implications of climate action for competitiveness.

e. Leveraging private sector engagement in ways consistent with poverty reduction and sustainable development (including through regulatory re-engineering).

f. Linking resilience and social protection.

g. Green fiscal policy, with important links to public expenditure management and tax structures.

h. Follow up on INDCs after Paris, supporting negotiators with a stream of work on the emissions gap, MRV, and related issues, including IAMs. Additional work is also needed on capacity and on the art form of negotiation.

i. Parliamentary and legislative processes, including working with think tanks.

j. Building the capacity of knowledge brokers.

k. Further work on climate finance and the simplification of the financial architecture.

Central to this whole agenda is managing the politics: balancing winners and losers, managing trade-offs, and dealing with the vested interests.

The agenda can be presented as a climate agenda, but what is really striking, especially if the conversation veers to mainstreaming, is that this is also a development agenda, one with which development studies is entirely familiar. There is not an issue here which is not well known. There are large literatures on each, active debates, and deep reservoirs of expertise.

Solving the puzzle, however, is a 'wicked problem', even a 'super-wicked problem'[2]. A wicked problem has the characteristics in Figure 6, listed by the Australian Public Service Commission. Note especially the emphasis on interdependencies and unforeseen consequences, as well as the nod to complexity theory.

Figure 6

Characteristics of a wicked problem

[2] Levin et al describe a 'super-wicked problem' as having four characteristicstime is running out; those who cause the problem also seek to provide a solution; the central authority needed to address it is weak or non-existent; and, partly as a result, policy responses discount the future irrationally. See: http://link.springer.com/article/10.1007%2Fs11077-012-9151-0.

- Wicked problems are difficult to clearly define – different stakeholders have different views of what the problem is and appropriate responses
- Wicked problems have many interdependencies and are often multi-causal – there may be conflicting goals for those involved
- Attempts to address wicked problems often lead to unforeseen consequences – wicked problems exist in complex systems that exhibit unpredictable, emergent behaviour
- Wicked problems are often not stable – understanding of the problem is constantly evolving
- Wicked problems usually have no clear solution – there is no right or wrong response, although there might be worse or better responses
- Wicked problems are socially complex – it is social complexity, rather than technical complexity, that is overwhelming
- Wicked problems hardly ever sit conveniently within the responsibility of any one organisation – these problems cross governance boundaries
- Wicked problems involve changing behaviour – with all the difficulties that poses
- Some wicked problems are characterised by chronic policy failure – they have become intractable, despite numerous attempts at solutions.

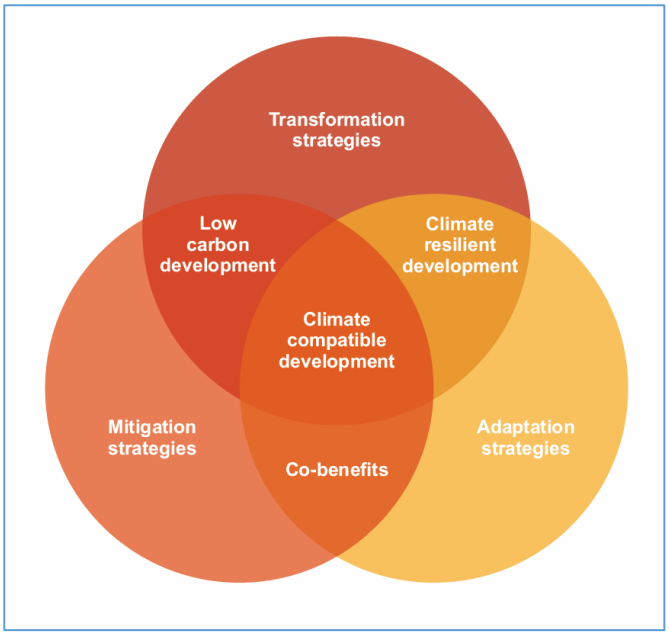
Source: http://chrisriedy.me/2013/05/29/climate-change-is-a-super-wicked-problem/

3. 'Climate Compatible Development' as a framework for analysis

An entry point to solving the wicked problem of climate change is the model of 'climate compatible development' developed for the Climate and Development Knowledge Network (Figure 7). Climate compatible development takes place when three things come together: mitigation, adaptation and transformation.

Figure 7

Climate compatible development



Source: www.cdkn.org

Mitigation and adaptation are self-evident in the venn diagram and are the basic building blocks of climate policy. The idea of transformation is less often emphasised. It refers to the impact of global climate change (or measures to deal with it) on tradeable sectors, including import-competing sectors as well as export-oriented, and potential as well as actual sectors, Transformation can affect businesses and governments anywhere in the world. Will international prices change (fob or cif)? Will new markets appear? Will old ones disappear? What will happen to the competitive advantage of different firms in different sectors? Thus:

'Climate-related economic development challenges and opportunities mean that:

- All exporters are affected by the rising cost of transport or the changing relative prices of transport types. So export-oriented growth strategies may not be as attractive or may require changing. Island economies that are dependent on tourism, for example, may be affected negatively by rising air transport prices. The same is true for export-led agricultural strategies, like flowers or horticulture, which also face uncertainty over temperature changes and the volume and distribution of rainfall.
- Some developing country producers may benefit from exploiting demand for biofuels or the opportunities presented by carbon market incentives to conserve forests. Conversely, countries with a traditional economic reliance on exporting high carbon fuel sources, such as oil and coal, may be disrupted by a shift in demand to cleaner fuels.
- Mitigation and adaptation technologies are developing rapidly, creating opportunities for innovators to make profits, disadvantages for late adopters, and the potential for technological leap-frogging. Technological innovation can also create new resource

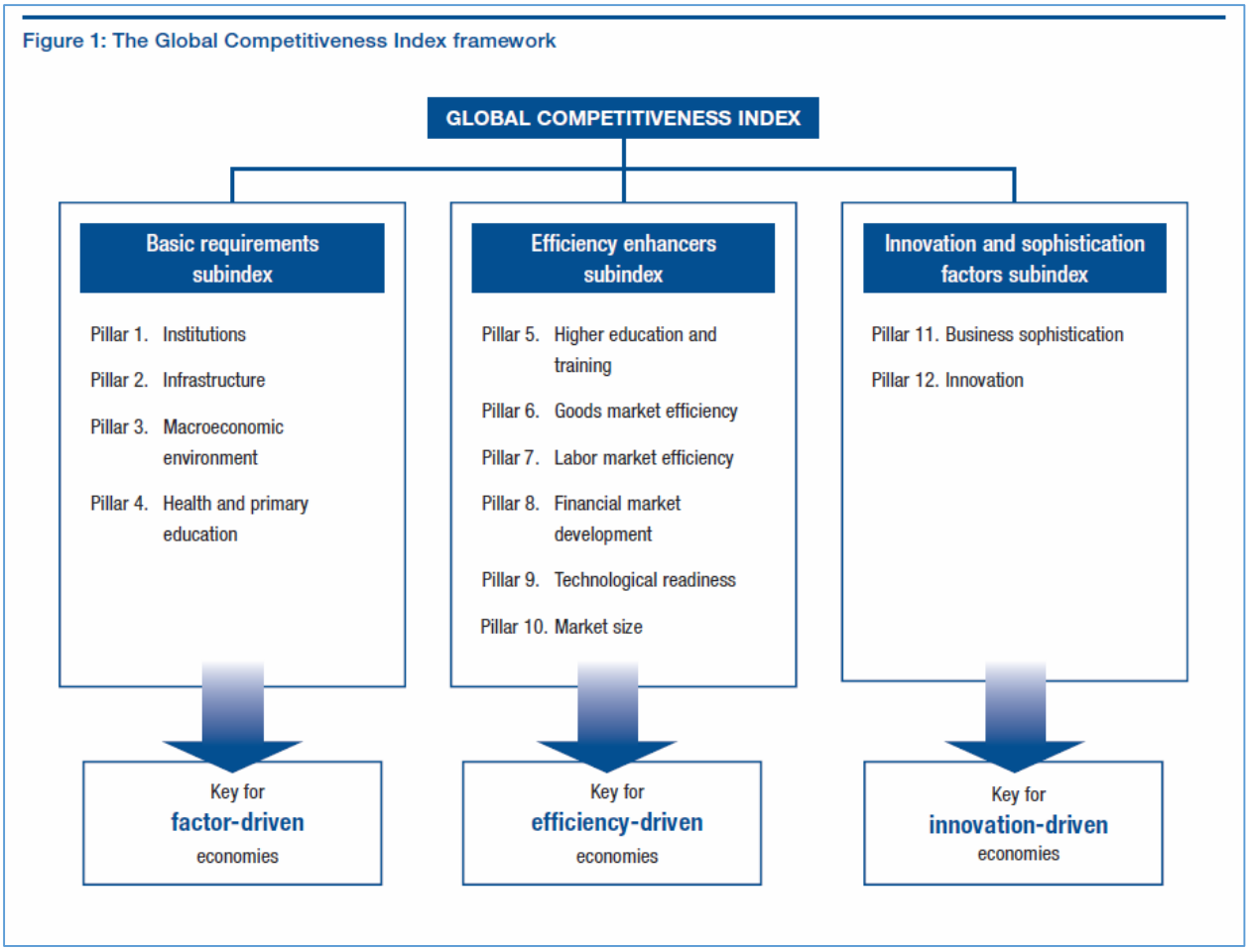
opportunities. Demand for a new generation of batteries, for example, is good news for Bolivia's lithium industry.'[3]

In this context, key aspects of climate compatible development are how to foster innovation, and how to put industrial policy back at the centre of debate: Justin Lin calls this the new structural economics. Mariana Mazzucato's Entrepreneurial State becomes the instrument of choice.

One way in to this debate is to examine a country's competitiveness. The World Economic Forum's Competitiveness Index explicitly recognises the importance of technical readiness and innovation as countries develop. See Figure 8. Other approaches include the growth diagnostics developed by Hausmann and colleagues[4].

Figure 8

The Global Competitiveness Index Framework



Source: http://www3.weforum.org/docs/gcr/2015-2016/Global_Competitiveness_Report_2015-2016.pdf

[3] http://cdkn.org/wp-content/uploads/2012/10/CDKN-CCD-Planning_english.pdf
[4] For a review, see: http://www.scientificpapers.org/wp-content/files/1215_Habermann_Padrutt_Growth_Diagnostics_Strengths_and_Weaknesses.pdf

If the new climate and development agenda is genuinely transformational, which countries will own the successes of 'disruptive innovation' and which will lag?

4. Issues in climate compatible development

As climate compatible development has moved from the fringe to the mainstream, seven issues have come to the fore and have demanded solutions (Figure 9). These are discussed in a new book from CDKN. Let me focus here on three issues, viz: policy leadership; policy design; and policy implementation.

Figure 9

Issues in mainstreaming climate compatible development

- First, eliminating ambiguity in the concept of climate compatible development, and exploring possible trade-offs in the implementation of climate-related policies that will deliver the SDG goals and targets.
- Second, making the case and winning the argument, in countries where leaders face many competing demands on political capital and resources.
- Third, managing climate compatible development planning in ways that mainstream climate concerns into development planning and ensure cross-government coherence.
- Fourth, finding the resources to cover any additional costs of climate compatible development, drawing on international as well as domestic sources.
- Fifth, creating the right culture and instruments for implementation, to ensure that plans are not blown off course.
- Sixth, delivering at scale, so that impact is transformational in scale and irreversible.
- Seventh, linking the national to the global, so that national interests are well-represented in global negotiations, and global agreements are reflected in national action.

Source: http://www.cdkn.org/mainstreaming/

Policy leadership

It may seem strange to give prominence to the issue of leadership so soon after the apparently successful conclusion of the climate talks in Paris – talks marked by the deep personal engagement of around 150 leaders from around the world, including religious as well as political figures[5].

[5] http://www.theguardian.com/environment/blog/live/2015/nov/30/paris-climate-summit-world-leaders-meet-for-opening-day-live

However, as Andrew Adonis, a former UK Government Minister, reminds us in his book on education, 'Education, Education, Education: Reforming England's Schools', reform is a marathon and not a sprint. Leaders need to 'lead and explain, lead and explain' (Figure 10).

Figure 10

Lessons on leadership

1. Address the big problems
2. Seek the truth and fail to succeed
3. Keep it simple
4. Be bold, but go with the grain as far as possible
5. Lead and explain, lead and explain
6. Build a team
7. Build coalitions, not tabernacles
8. Champion consumers not producers
9. On important issues, micro-manage constantly
10. Keep calm and carry on
11. Reform is a marathon not a sprint
12. Always have a plan for the future

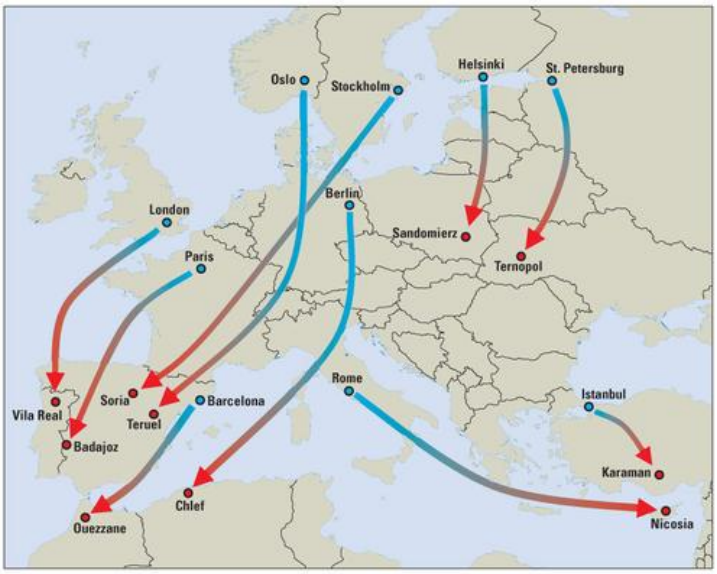
Source: https://www.bitebackpublishing.com/books/education-education-education

Climate change is a complex area, and explanation is a science in itself. Jonathan Haidt, for example, discusses the way in which messages can be crafted to reach people with very different moral 'taste-buds'[6]. Sometimes images can make a powerful case. For example, the World Bank's World Development Report on climate change from 2010 shows which places European capitals are likely to resemble by about 2050 (Figure 11). Oslo and Stockholm are relocated, so to speak, to Northern Spain, London to Northern Portugal, and Berlin to Chlef in Algeria.

Figure 11

Northern cities need to prepare for a Mediterranean climate

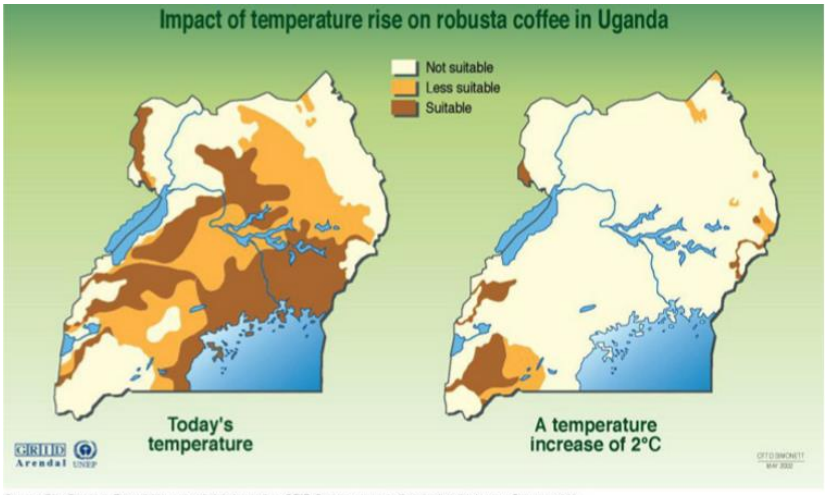
[6] http://www.simonmaxwell.eu/book-reviews/the-righteous-mind-an-application.html



Source: http://wdronline.worldbank.org/content/chapter/world_development_report_2010/media/WB.978-0-8213-7987-5.part1/WB.978-0-8213-7987-5.part1.ch2/WB.978-0-8213-7987-5.part1.ch2.sec3.fig4.jpg

Another example (Figure 12) shows the area suitable for robusta coffee in Uganda, now and if temperature rises by 2^0 C. This is from the Uganda National Climate Change Adaptation Plan of 2007, and shows coffee almost disappearing from Uganda unless new technology can be found. Coffee, it is worth noting, employs 3.5m people in Uganda, and provides 30% of export earnings. There are many similar examples – tea in Kenya, for example, or coffee in Colombia. In Colombia, coffee will move up the mountain by 400m, a very significant change.

Figure 12
Impact of temperature rise on robusta coffee in Ethiopia



Source: http://unfccc.int/resource/docs/napa/uga01.pdf

It is also important to leave people feeling empowered not powerless, with an optimistic message that something can be done. As Anthony Giddens observed in his book on the politics of climate change, Martin Luther King did not stir his audience in 1963 by declaiming 'I have a nightmare' . . .

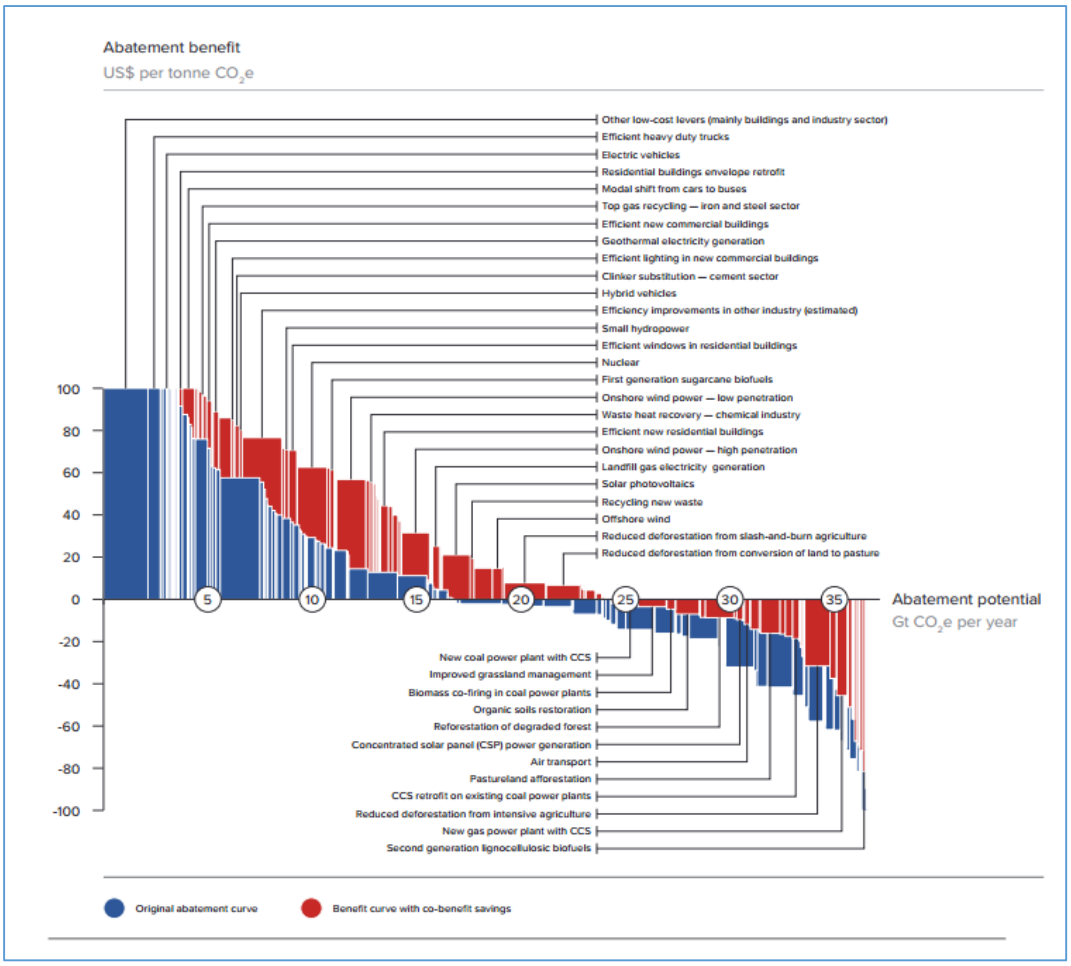
There are other important lessons about leadership in Adonis' list. One is to 'build coalitions, not tabernacles'. This *inter alia* implies a role for parliamentarians, working together in cross-party consensus. For example in the UK, the Climate Change Act, which set a long term decarbonisation goal and established in the independent Climate Change Committee to monitor progress, was passed by the House of Commons with only five votes against[7].

Policy design

There are literatures on the technicalities of climate change policy in developing countries: international, national and local; fiscal and administrative; climate-specific or more general. There is no shortage of guidance on how to design a cap and trade regime, or an energy policy which favours renewables, or a package to strengthen resilience to climate shocks. CDKN has published many policy briefs and 'inside stories' that deal with these topics. The new Climate Economy Report has many examples, using MAC curves (Figure 13). The UNEP Emissions Gap report provides an accessible list of successful innovations, including in such fields as transport and energy efficiency, as well as agriculture. (Figure 14).

Figure 13
Marginal Abatement Benefits Curve for 2030

[7] See https://www.theccc.org.uk/tackling-climate-change/the-legal-landscape/global-action-on-climate-change/



Source: http://2014.newclimateeconomy.report/wp-content/uploads/2014/08/BetterGrowth-BetterClimate_NCE_Synthesis-Report_web.pdf

Figure 14
Summary of proved policies for reducing GHG emissions

Box 4.3: Summary of proven policies for reducing GHG emissions and achieving development goals highlighted in previous UNEP emissions gap reports (source: UNEP 2012, 2013, 2014)

The 2012, 2013 and 2014 UNEP Emission Gap Reports identify policies in key areas that have proven successful in reducing greenhouse gas emissions in many different countries, while contributing to national development goals. Such policies have the potential to make a significant contribution to bridging the gap, if scaled up in terms of ambition and geographical coverage.

Energy

These policies are related to improvements in energy efficiency in various sectors:

- Building sector – Regulations for building energy performance or codes for new construction: especially with regards to energy efficiency in heating, cooling appliances and lighting. Most developed countries also need to pay attention to renovating existing buildings in an energy efficient manner
- Industry sector – Country- and subsector-specific approaches rather than standardized policies: due to the diverse nature of the industry sector target policies have proven most effective
- Transport sector – Mandatory fuel economy standards for road vehicles: principal means for slowing down the growing fossil fuel consumption. Often supplemented with measure such as labelling, taxes and incentives, while promoting more efficient transportation modes
- Appliance standards – Regulations that prescribe the energy performance of manufactured products
- Appliance labels – Energy-efficiency labels that are fixed to manufactured products to describe the products' energy performance.

Agriculture

- Promotion of no-tillage practices
- Improved nutrient and water management in rice production
- Agroforestry: different agricultural management practices that all deliberately include woody perennials on farms and the landscape, and which promote a greater uptake of carbon dioxide from the atmosphere by biomass and soils.

Buildings

Policies that lower energy use and therefore reduce carbon-dioxide and other emissions (see also under Energy):

- Building codes: regulatory instruments that set standards for specific technologies or energy performance levels and that can be applied to both new buildings and retrofits of existing buildings.

Transport

These policies reduce energy use and therefore reduce carbon dioxide and other emissions (see also under Energy):

- Transit-oriented development: the practice of mixing residential, commercial and recreational land uses to promote high-density neighbourhoods around public transit stations
- Bus Rapid Transit (BRT): key elements of bus rapid transit include frequent, high-capacity service; higher operating speeds than conventional buses; separated lanes; distinct stations with level boarding; and fare prepayment and unique branding
- Vehicle performance standards: establish minimum requirements based on fuel consumption or greenhouse gas emissions per unit of distance travelled by certain vehicle classes.

The policies included above do not represent a comprehensive list. Moreover, some policies will be more appropriate and successful in reducing emissions in some countries than in others. Their success also depends on how stringently they are implemented.

Source: http://uneplive.unep.org/media/docs/theme/13/EGR_2015_301115_lores.pdf

It is important in policy design to assess the impact on the poorest. The ODI Zero-Zero report illustrates how this can be done (Figure 15). Note that the impacts are not necessarily positive. Climate Compatible Development cannot be assumed.

Figure 15
Examples of climate mitigation actions and their impact on the poor

Table 3. Examples of climate mitigation actions and their impact on the livelihoods of the extreme poor

Mitigation action	Impact on the livelihoods of the extreme poor	Additional pro-poor considerations
Climate-smart agriculture practices	Direct increase of agricultural productivity and income for those in extreme poverty. Direct increase in the value of land for poor land-owners. Increased resilience and reduced risk of large income fluctuations.	Benefits dependent on the availability of financing and technical capabilities for those in extreme poverty. Most effective when combined with the formalisation of land rights.
Preserving and increasing natural carbon sinks	Job and income creation or enhancement for those reliant on forest products. Increase in the value of land for poor land-owners benefiting from associated eco-system services (e.g. water regulation, soil conservation).	Job and income creation targeted at those who may have lost source of livelihood through forest preservation.
Increased public transport	Reduction in health-related costs from air pollution. Greater mobility at lower cost, which expands employment opportunities and net benefits.	Public transport designed and priced to ensure that benefits accrue to those in extreme poverty.
Low-emissions waste management	Reduction in health-related costs from poor sanitation.	Waste treatment priced to ensure that benefits accrue to those in extreme poverty.
Energy-efficient residential buildings	Reduced long-terms cost of housing and related services. Improved asset value for the home-owning poor.	Benefits dependent on the availability of financing and technical capabilities for those in extreme poverty. Most effective when combined with the formalisation of property rights.
Distributed renewable energy (electric and household thermal)	Reduction in health-related costs from indoor pollution. Access to energy at lower cost than high-carbon alternatives.	Distributed renewable energy may be limited to providing energy services that only meet basic needs
Centralised renewable energy (electric and thermal)	Reduction in health-related costs from ambient air pollution when replacing coal-fired generation. Job creation (IRENA). Higher cost of energy could have a negative impact on the resources of those in extreme poverty.	Avoiding impacts on energy prices would require compensation through other mechanisms.
Increased bio-energy (power or transport)	Higher agricultural crop prices could improve the incomes of poor farmers. Higher food prices could have a negative impact on those in extreme poverty in urban areas	Avoiding impacts on food prices would require clear restrictions on where bio-energy crops are grown.
Reduced subsidies for fossil fuels and agricultural inputs (including fertilisers)	Better-targeted technical and cash transfers increase the income of those in extreme poverty.	Dependent on replacing regressive subsidies with better-targeted assistance.

Source: http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9844.pdf

Indeed, there is a more general point, that most policy change, on any topic, creates winners and losers, some of whom may be poor, and some not. That is why managing transition is central to effective climate compatible development. For example, Morocco had a staged approach to reducing energy subsidies which cost 5.5% of GDP, first by educating the public about the cost and then making sure that losers from the elimination of subsidies were compensated through a social programme. Similarly, Australia's Carbon Pricing Mechanism Legislation included the following measures:

- The legislation allowed for a staged implementation of a carbon price, beginning with emissions reporting, and moving gradually (by 2018) to a fully flexible emissions trading scheme, linked to the European Union's Emissions Trading Scheme.
- Pollution caps were announced in advance to provide five years' worth of certainty.
- Assistance was given to emissions-intensive trade-exposed industries, in the form of free permit allocations, but on a declining basis, and targeted grant programmes. Both were designed to provide incentives to improve emissions intensity.
- Households were given assistance as well, in the form of tax cuts and increased payments to pensioners and welfare recipients, paid for by directing 50% of all revenues raised from carbon pricing to households.
- The Climate Change Authority and the Productivity Commission regularly reviewed the legislation and its impacts.

Thus, policy design for climate compatible cannot be simply about choosing the best technical interventions.

Policy implementation

Finally, it is worth remembering that leadership in measured by actions not words. As Tony Blair observed, in a piece for his African Governance Initiative, published by the Centre for Global Development:

'Government is a race between expectations and capability. As a leader, you either reform government fast enough to deliver what people expect of it, or you lose the support to govern. . . . (Thus), good leadership is . . . not merely a function of good intentions but of the capacity of the institutions that support leaders to turn those intentions into practical results.'

Tony Blair created controversy in the UK with a speech complaining about 'scars on my back' from trying to reform the public sector. He established a delivery unit to focus on implementation, headed by Sir Michael Barber, who wrote a book pointedly called 'Instruction to Deliver: Fighting to Transform Britain's Public Services'. This promulgated a strongly target-based, quantitative and not uncontroversial approach to monitoring progress.

CDKN has acquired useful experience in supporting implementation at country level. Climate compatible development planning cannot be the prerogative of Ministries of Environment, however vital those are as catalysts of process. In the countries where CDKN has worked, climate compatible development becomes credible only when Ministries of Finance, Planning, Energy, Infrastructure, Industry and Agriculture become fully committed. All stakeholders need to be involved, including the many private sector actors and civil society groups. Successful implementation has also depended on strong cross-government coordination, and this in turn has benefited greatly from having sufficient numbers of people exposed to climate change issues and trained in relevant analysis. Capacity can be built in various ways: internally, through on-the-job training, or via fellowships and secondments, including internationally. As a knowledge network, CDKN has demonstrated the value of knowledge brokers in building and maintaining country capacity.

There are also lessons about how not be trapped in a 'pilot phase syndrome'. Lessons from CDKN experience point to the importance of telling good stories, supporting project champions, and providing leaders with compelling evidence from monitoring and evaluation. Once a snowball effect can be induced, professional networks play a role through learning and peer exchange.

These lessons are not very different from those garnered from more general change management experience, for example Kotter's 8-step process for leading change, which emphasises the importance of building on the success of short-term wins (Figure 16). However, it is worth emphasising one key lesson from CDKN experience. This is that there is no single blueprint to the challenge of climate compatible development. Progress at country level, and subnationally, will be idiosyncratic, progressive, and probably uneven, characterised by sudden leaps forward and occasional, unexpected setbacks. The challenge for all those engaged in climate compatible development, is to prepare for such a process[8].

Figure 15

The 8-step process for leading change

Source: http://www.kotterinternational.com/the-8-step-process-for-leading-change/

[8] Text adapted from: http://www.cdkn.org/mainstreaming/

5. Conclusion

I observed earlier that climate compatible development is really a development agenda; and I have argued elsewhere that it is time for development studies to lead the charge on climate change. That imposes a special responsibility on all of us who work in development think-tanks – building on much good work that already exists.

Development studies will bring many assets to the table. For example, the wider field will benefit from the methods of development studies, including especially multi-disciplinarity, ranging across issues, and linking the macro to the micro.

More fundamentally, however, and this brings me back full circle, is the importance of the values so strongly embedded in development studies, and so strongly represented at the Centre for Policy Dialogue: trust-building, dialogue, independence, sharing, and a commitment to praxis. In turbulent times, these are the lode-star.

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