

## Policies for low carbon growth

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**T**he Overseas Development Institute (ODI) has reviewed the low carbon growth and climate change response strategies of a range of countries with differing economic characteristics to draw out the policy implications for developing countries at different stages of development (Ellis et al., 2009).

The study, financed by the UK Department for International Development (DFID), selected a cross-section of high-, middle- and low-income countries to conduct a balanced review of low carbon growth policies. High-income countries (HICs) included Germany and the United Kingdom. Middle-income countries (MICs) included China, Brazil, Mexico, Guyana and Nigeria.

Low-income countries included Bangladesh and Ethiopia. Shorter 'snapshots' were also provided for South Korea, India, Malawi, Rwanda and South Africa. These countries were chosen because they indicate the range of activities being carried out. All have published official documents outlining their climate change policies, such as national strategy documents, National Adaptation Programme of Action (NAPA) reports to the UN Framework Convention on Climate Change (UNFCCC), and national communications to the UNFCCC.

Growth has been, historically, highly correlated with carbon emissions. In light of the impact that this has had on climate change, new, low carbon growth strategies are being sought, i.e. policymakers are now seeking to achieve growth pathways that are associated with relatively low increases in carbon emissions.

Many developing countries have struggled to achieve any kind of sustained growth however, and have contributed little to the problem of climate change. The question for them will be how to achieve growth at all, particularly in light of climate change and international mitigation policies and the impact these are having on their economies.

These countries will need to find climate resilient growth strategies (i.e. growth strategies which are achievable despite the impact of climate change), and identify and manage opportunities (such as new markets) and risks (such as trade barriers) that arise from international mitigation efforts, in order to achieve growth in future.

Having an appropriate policy framework in place (such as a NAPA or Nationally Appropriate Mitigation Actions (NAMA)), is likely to help countries secure public and private funding for adaptation and mitigation. Identification of future mitigation opportunities and low carbon growth trajectories could thus be important, even for countries that have achieved only low growth rates to date. This will allow such countries to position themselves to take maximum advantage of new opportunities that may arise. For this reason we have considered both low carbon and climate resilient growth strategies in this report, as well as strategies to maximise growth potential arising from international mitigation efforts going forward.

The report draws on the case studies and other relevant literature to identify possible policy lessons and discuss the extent to which low carbon growth challenges traditional growth theory and policies.

Achieving low carbon growth clearly has major implications for policy, and implies considerable adjustment of the traditional growth agenda. However, low carbon growth does not present a major challenge to traditional growth theory, it simply requires the internalisation of the environmental costs of growth through the appropriate pricing of goods and services. This can be achieved through a range of mitigation policies, such as taxes on the production or consumption of carbon intensive goods.

The potential impact of mitigation policies on growth is unclear. Constraints on emissions raise the cost of energy which, in turn, reduces the output that can be achieved with a given set of inputs. No consensus exists on the costs of mitigation however, which will depend on the efficiency and nature of the policies adopted, and the extent of technological innovation achieved. And mitiga-

tion could also generate new growth opportunities, which would offset those costs.

This could be the case if, for example, there is fast growth in demand for environmental goods and services. Significant co-benefits associated with mitigation could also occur if there are strong synergies between green technology change and industrial technological progress, which is a key source of growth. Policies designed to promote green technological innovation and technology transfer could thus also potentially increase growth. In addition, some mitigation policies generate revenues (e.g. carbon taxes) and provide opportunities to stimulate growth through the judicious use of the revenues raised.

Thus the design of national mitigation policies and the way incentive mechanisms for low carbon growth are created will determine overall growth effects. The literature on this is mixed however, and modelling results depend enormously on the particular assumptions that are used. While much of the literature on mitigation suggests an overall negative impact on growth, a recent report by The Climate Group finds that a global climate agreement could lead to an increase in global GDP of 0.8% by 2020 relative to projected GDP with no climate action.

In addition to the overall impact of mitigation on global growth, the distribution of mitigation efforts will be important in determining the growth impacts in different parts of the world. Rich countries may need to accept lower rates of growth in future, if developing countries are to have the necessary space to grow their way out of poverty. The way that revenues from international mitigation efforts are used will also be important. For example, if auction revenue raised from permit sales in carbon cap-and-trade schemes is then used to finance mitigation or adaptation in developing countries, this could generate significant gains for recipient countries.

Mitigation policies will affect different sectors in different ways and are likely to imply adjustments to the sectoral sources of growth enjoyed previously by some countries. For example, mitigation policies which drive down the price of oil will generate a net loss for oil exporting countries and net gain for oil importers.

Air transport taxes might reduce demand for tourism or for air freighted exports such as fruit and vegetables. Carbon taxes may generate carbon leakage (i.e. the shift of dirty industry to pollution havens) and reduce income associated with carbon intensive products. The impact of these policies will vary significantly by country, depending on their sectoral composition. The analysis of the potential impact of different kinds of mitigation policies is fairly limited to date and the subject of a forthcoming ODI study.

A key determinant of the impact of international efforts to mitigate climate change on developing countries' growth paths will be the policies adopted

by developing countries to adapt, mitigate and strategically position themselves in order to benefit from these international mitigation responses. This is likely to include the pursuit of a low carbon growth path as a prerequisite for receiving finance either for mitigation or adaptation. Appropriate policies can help to position countries to take advantage of new economic opportunities that may arise and can also help protect countries from threats to their growth arising from climate change or its mitigation.

## Identifying policy implications

To aid comparison across countries, and with conventional growth policies, the review has been structured around the following six key pillars:

1. Finance for mitigation and adaptation;
2. Human capital;
3. Technological progress in energy, infrastructure and transportation;
4. Investment in agriculture and forestry;
5. Trade and private investment opportunities;
6. Incentives and regulation for low carbon growth.

We have reviewed case studies and literature under each of these pillars and identified the following possible policy lessons. (A more detailed discussion of policy implications drawn from the country policy reviews is contained in the full version of this report.)

### Finance for mitigation and adaptation

- For the international policy community, the achievement of an international agreement on emissions reductions is a priority to help unlock private finance for mitigation.
- Countries can be strategic in how they position themselves to attract finance for mitigation and adaptation. For example, the development of a 'Climate Change Fund'/multi-donor trust fund, and an appropriate policy framework e.g. a NAPA, NAMA, and/or a low carbon growth strategy, can help to convince donors that climate change is taken seriously in that country, and that any funding will be spent transparently and effectively.
- Developing countries need to continue to lobby for financial support for mitigation and adaptation, and for reform that will help them benefit more from carbon markets, including the Clean Development Mechanism (CDM).
- For countries with carbon assets, strategic positioning, policy development, and lobbying for financial support for mitigation and adaptation, may help to both influence the international agenda, and the development of international mitigation mechanisms, such as Reduced Emissions from Deforestation and Forest Degradation (REDD) and CDM, in their favour, both in terms of scope and scale.

- Widening the scope of carbon markets to enable more LICs to benefit, and improving the investment climate in developing countries may also help them to maximise financial inflows of private finance for mitigation.
- Not all developing countries will be able to obtain private finance for mitigation and adaptation. Increasing the availability of public finance will also be important in supporting developing countries' low carbon growth efforts.

### Human capital

- Broad awareness-raising may help increase public understanding of climate change and its effects, and the implications for people's livelihoods and welfare going forward. This can be implemented formally, for example through schools, or informally, through public awareness campaigns.
- Training in skills relating to green technologies and industries can help position countries to take advantage of any new low carbon growth opportunities and markets.
- Targeted investments in health, water and sanitation may help increase climate resilience by protecting human capital from the potential negative health impacts of climate change.

### Technological progress in energy, infrastructure and transportation

- Infrastructure improvements and the development of clean energy options should be made as soon as possible to reduce emissions as well as adapt to potential impacts. This will avoid locking in high-carbon technologies and processes as demand for energy rises. The development of decentralised grids may offer co-benefits between greener energy production, and increased access to energy.
- Strategic thinking and strong policy management of patterns of urbanisation may be required to increase climate resilience and facilitate low carbon growth.
- Government can play an important role in clarifying the future direction of policy and the key decisions that will be made on energy production and infrastructure development, to give business the confidence it needs to undertake low carbon investments.
- It is critical for low-income countries to receive international support and technology transfer to facilitate their transition to a low carbon economy. Greater efforts to promote international cooperation on research and development may help to promote technological diffusion. A re-examination of intellectual property provisions in the World Trade Organization (WTO) may also be needed.
- Countries should identify renewable resources that provide the greatest advantage in view of local conditions, resources, and state of development.
- The future development, demonstration and trans-

fer of technology for carbon capture and storage will be very important for countries that continue to develop their large coal reserves.

- Governments in all countries can benefit from working with the private sector and civil society to scale up renewable technologies, from improved cookstoves to large-scale wind and solar to hydropower.
- Transport is best approached holistically and should include public transport, clean, sustainable fuels, and efficient vehicles.
- Biofuels offer a potentially important new export opportunity for some developing countries, although major developed countries still impose protection on biofuel imports.

### Investment in agriculture and forestry

- Greater understanding and awareness of the impact of climate change on agricultural productivity, and shifts in demand for agricultural produce will help developing countries to improve climate resilience and take advantage of possible new growth opportunities. Education of farmers will be an important component in this.
- Comprehensive approaches that include improved agronomic practices; climate-resistant crop varieties; water, soil and fertiliser management, and better livestock management are needed.
- Adaptation efforts in agriculture may be most important in poor countries that rely disproportionately on agriculture and are likely to be most affected by climate change.
- Forestry payments present a significant potential financing opportunity for some countries, if international mechanisms such as REDD can be successfully developed.
- Countries that develop a rigorous, comprehensive, transparent and inclusive process around sustainable forest management may be more likely to secure international investments and future CDM benefits and turn them into successful alternative growth strategies and conservation of forests.
- Agriculture offers considerable potential sequestration benefits though there are significant barriers to attracting carbon finance for this sector.

### Trade and private investment opportunities

- Countries that identify, target and secure new green investment and growth opportunities stand to benefit more from the transition to a low carbon economy.
- There is a role for government leadership to identify low carbon growth sectors which may provide competitive advantage and employment growth.
- The development of new opportunities must be backed by sufficient support and funding from government and the international community. This includes the creation of an appropriate policy environment; provision of the necessary training/

education; investment promotion and awareness raising; and collaborative partnerships between the public, private and NGO sectors.

#### Incentives and regulation for low carbon growth

- Internationally coordinated action to mitigate climate change can help reduce the risk of a ‘race to the bottom’ in relation to the taxation and regulation needed to stimulate low carbon growth.
- Donor support for low carbon regulation and taxation could help build developing countries’ capacity to implement such policies effectively.
- An ongoing review of the efficacy and cost-effectiveness of measures by different countries to incentivise the necessary changes in behaviour and stimulate low carbon growth, could help improve policy-making in this area.
- Many of the barriers to low carbon growth, mitigation financing and technological transfer in developing countries are the same as the barriers to growth and investment generally i.e. a poor investment climate and uncompetitive markets. Policies to tackle these remain important.

#### Policy processes

In our review, we also looked at the policy processes adopted in each country. Possible lessons include:

- Policy statements should go beyond ‘statements of intent’ to provide a roadmap for specific measures and an implementation plan.
- Policy is strengthened by underpinning studies.
- Consultations help to obtain ideas and include various stakeholder viewpoints; promote coordination and collaboration, and enhance transparency and trust in the process.
- The inclusion of civil society helps build support for policies and thus aids in implementation. Consulting and partnering with the private sector can help increase the feasibility and market-friendliness of policies that are proposed. This can facilitate greater private sector engagement in achieving low carbon growth and improve the sustainability and scale-up of green investments.
- Training and education can help with coordinating different government departments and policies.

- Providing strong policy guidance is crucial to implementation.

#### Progress to date and lessons learned

The countries we have reviewed have already taken steps to develop a climate change or low carbon development strategy, and thus are, to a greater or lesser degree, ahead of other countries, within their income category at least. However, there are still a number of issues that most countries either did not address or could not resolve in their policy documents. These include:

- Specification of a (potential) funding source for climate mitigation and adaptation activities;
- An implementation roadmap with specific measures;
- Anti-corruption and pro-transparency measures governing the use of mitigation/adaptation funds;
- A framework for macro management and measures to combat Dutch Disease;
- Identification of new green growth opportunities and the policies needed to achieve them;
- A rigorous consultation process;
- The need for policy alignment and intra-governmental cooperation.

So, although many of these countries are, to some extent, ahead of the game in terms of policies to promote low carbon growth and climate resilience, it is clear that improvements can still be made.

Nonetheless, the policies they have set out and the processes they have pursued can provide valuable lessons for other countries only now beginning to think about how they will respond to climate change.

While it is too early to judge the efficacy of many of these policies (and indeed many of them are still only being planned), ongoing monitoring of their impact will be important in ensuring that lessons are learned globally, thus speeding up the effective response to this most pressing of problems.

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