

Understanding Climate Change

Part 4

Approaches to addressing climate change

In previous articles, the impacts of climate change were discussed and the urgency of addressing the issue was emphasized. To address this global dilemma, several significant actions have been taken at the global, regional and local levels. Some of the key approaches to addressing climate change are discussed in this article.

Adaptation and Mitigation

In addressing climate change, actions are generally grouped under two broad headings - Mitigation and Adaptation.

Mitigation

Mitigation involves interventions to reduce the emissions of greenhouse gases, either by addressing the source of emissions (such as vehicle exhaust fumes, industrial pollution, and cutting down of forests) or by enhancing their removal from the atmosphere through “sinks” (a sink includes forests, vegetation or soils that can reabsorb carbon dioxide).

The UNFCCC highlights the key sectors that release green-house gases into the atmosphere. (See Figure 1)

It is important that mitigation actions address emission reductions from these and other key sectors.

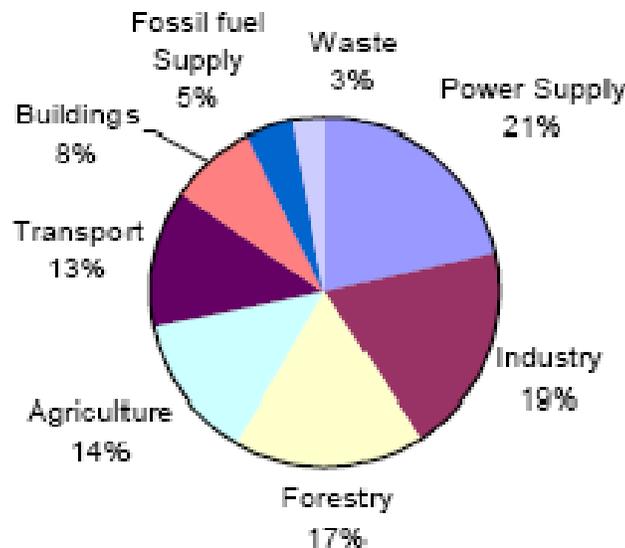


Figure 1: Share of Global greenhouse gas emissions by major sectors (Source: UNFCCC)

According to the IPCC FAR, a wide variety of policies and instruments are available to governments to create the incentives for mitigation action. They include:

- Integrating climate policies in wider development policies
- Regulations and standards
- Taxes and charges
- Tradable permits
- Financial incentives
- Voluntary agreements
- Information instruments
- Research, development and demonstration

Some examples of key mitigation actions include: switching from fossil fuel based sources of energy to cleaner ones and renewable energy systems, energy efficiency activities, carbon sequestration projects, improved land use management, avoided deforestation, forest conservation and sustainable forest management.



Many countries support mitigation actions that are suitable based on national circumstances.

In Guyana, for example, almost 80% of the country's territory consists of tropical rainforest that is still largely untouched. Forests are natural regulators of carbon dioxide in the atmosphere by helping to store carbon for long periods. When forests are damaged or cleared, the burned or decaying wood releases the carbon stored in trees in the form of the greenhouse gas, carbon dioxide, increasing the levels of green-house gases in the atmosphere.

Guyana can play a great role in mitigating climate change through the continued conservation and sustainable management of its forests and by avoiding deforestation.

While many countries have the potential to support activities to mitigate climate change, there are a wide range of challenges, including limited financial resources, which limit their ability to do so.

There are various studies which have estimated the costs of mitigating climate change. According to Mckinsey and Company (2009), mitigating climate change globally would cost € 200 to € 350 billion annually by 2030. This would cost the world less than 1% of GDP forecasted for 2030.

According to the Stern Review, 2007, 'Mitigation must be viewed as an investment, a cost incurred now and in the coming few decades to avoid the risks of very severe consequences in the future. If these investments are made wisely, the costs will be manageable, and there will be a wide range of opportunities for growth and development along the way'.

It is therefore important to take strong measures to mitigate climate change as soon as possible, in order to avoid the occurrence of the most catastrophic effects.

Adaptation

Adaptation (in the context of climate change) refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harmful impacts or exploits beneficial opportunities.

According to the United Nations Framework Convention on Climate Change (UNFCCC), adequate attention must be given to responding to the impacts of climate change that are already occurring, while at the same time preparing for future impacts. In this regard, it is most urgent to ensure adequate and rapid support to the most vulnerable countries and communities. Increased investment in adaptive capacity, such as strengthening the ability of countries to reduce disaster risk, will safeguard economic progress already made and increase the climate resilience of economies on the way to achieving overall development goals.

Some examples of Adaptation options are :

- Behavioural change at the individual level, such as the sparing use of water in times of drought
- Technological and engineering options such as increased sea defences or flood-proof houses
- Risk management and reduction strategies such as early warning systems for extreme events
- Promotion of adaptive management strategies
- Development of financial instruments such as insurance schemes
- Promotion of ecosystem management practices, such as biodiversity conservation to reduce the impacts of climate change on people.

Developing countries are amongst those most vulnerable to the negative impacts of climate change and have to place great emphasis on adaptation. For such countries, however, adaptation can be a major challenge.

According to the IPCC FAR, a range of barriers limits both the implementation and effectiveness of adaptation measures. The capacity to adapt is dynamic and is influenced by a society's productive base, including natural and man-made capital assets, social networks and entitlements, human capital and institutions, governance, national income, health and technology.

Adaptation needs sufficient and sustained funding so that countries can plan for and implement adaptation plans and projects. Projected global costs for adaptation are estimated at approximately US\$75-100 billion per year for the period 2010 to 2050 (World Bank, 2009).

In Guyana for example, major efforts would be required to build capacity for the country to adapt to the anticipated impacts of climate including extreme weather patterns and sea-level rise leading to flooding.

According to Guyana's draft Low Carbon Development Strategy (LCDS, 2009), by 2030, the annual loss due to flooding in Guyana is projected to be US\$150 million (or close to 10 percent of current GDP). Additionally, an extreme event similar to the serious flooding that occurred in 2005, which resulted in losses equivalent to 60 percent of GDP, could result in some US\$0.8 billion in losses and cause harm to more than 320,000 people.

The document estimates that total adaptation costs for Guyana are projected to exceed US\$1 billion at the national level.

It is quite clear that significant global efforts and resources are needed to fully support mitigation and adaptation efforts, especially for the poorest and most vulnerable countries.

In next week's article, we will examine approaches taken across the globe to address climate change.

*Information used in this feature was extracted from the following reports and sources : The Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007 (IPCC FAR), The Economics of Climate Change: The Stern Review (2007) , Guyana's LCDS- Draft (2009), World Bank , McKinsey & Company, International Institute for Sustainable Development (IISD) , UNFCCC.

Prepared by the Office of Climate Change , April, 2010

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