

## **Delivering Low-Carbon Society through Sustainable Development**

P R Shukla

A lot of debate on stabilizing GHG concentration has been limited to actions at the margins of the conventional development path. This approach involves high carbon price and is risky and unsustainable. A paradigm shift is needed to bring climate actions within the mainstream development strategy. The latter will require sustainable (alternative) development path and GHG stabilization to be pursued simultaneously.

Sustainable path to LCS will require a much wider/diverse portfolio of interventions than the conventional and high carbon path to LCS. While the latter will require mainly energy supply related options, the former will require interventions in both supply and demand sides and in a variety of areas. For example, the results of the two scenarios analysed for India indicate that the conventional path requires major penetration of CCS (with coal) and fuel switch in power sector, besides minor introduction of renewable energy and improvement of device efficiencies. The sustainable path, on the other hand, will require a variety of interventions like fuel switch in power sector, renewable energy, and a wide set of demand side measures like improvement in buildings, transport mode switch, appliance efficiency improvement, urban planning, greater recycling, reduction of consumption, and material substitutions that will result in reduced demand for steel, paper, cement and other energy intensive industries.

Key drivers of sustainable pathway to LCS are:

1. **Innovations:** Both changing behaviour and technology/R&D transfer are the key to LCS transition. Technological, social/institutional and management innovations will be necessary. In particular, the developing countries will need major reformation of their governance systems and institutions.
2. **Co-benefits:** Integrating GHG reduction with local benefits is important for developing countries. This will require aligning of different markets, exploring win-win options that deliver joint benefits, and a mechanism to share the costs and risks among global and local actions. So far the climate negotiations have followed the 'burden sharing' metaphor which poses climate stabilization as a high cost and zero-sum game, and this has caused conflicts. The sustainable development approach, by delivering co-benefits and reducing the cost of stabilizing climate, poses stabilization as a positive-sum game that would induce cooperation between different players including developed and developing countries. For example, energy cooperation among countries in South-Asian region has a potential to reduce GHG emissions by enhancing trade of hydro, gas and oil, besides delivering co-benefits like addressing the problems of water, food security and flood control, and lowering the energy prices.
3. **Sustainability:** This requires long-term vision and modification of preferences so as to avoid lock-ins due to investments that have long life. Sustainable low-carbon societies shall need exclusive climate-centric actions for stabilization and adaptation, but their costs and risks are much lower.