

FAQ 16.1 | Will innovation and technological changes be enough to meet the Paris Agreement objectives?

The Paris Agreement stressed the importance of development and transfer of technologies to improve resilience to climate change and to reduce greenhouse gas emissions. However, innovation and even fast technological change will not be enough to achieve Paris Agreement mitigation objectives. Other changes are necessary across the production and consumption system and the society in general, including behavioural changes.

Technological changes never happen in a vacuum; they are always accompanied by, for instance, people changing habits, companies changing value chains, or banks changing risk profiles. Therefore, technological changes driven by holistic approaches can contribute to accelerate and spread those changes towards the achievement of climate and sustainable development goals.

In innovation studies, such systemic approaches are said to strengthen the functions of technological or national innovation systems, so that climate-friendly technologies can flourish. Innovation policies can help respond to local priorities and prevent unintended and undesirable consequences of technological change, such as unequal access to new technologies across countries and between income groups, environmental degradation and negative effects on employment.

FAQ 16.2 | What can be done to promote innovation for climate change and the widespread diffusion of low-emission and climate-resilient technology?

The speed and success of innovation processes could be enhanced with the involvement of a wider range of actors from the industry, research and financial communities working in partnerships at national, regional and international levels. Public policies play a critical role to bring together these different actors and create the necessary enabling conditions, including financial support, through different instruments as well as institutional and human capacities.

The increasing complexity of technologies requires cooperation if their widespread diffusion is to be achieved. Cooperation includes the necessary knowledge flow within and between countries and regions. This knowledge flow can take the form of exchanging experiences, ideas, skills, and practices, among others.

FAQ 16.3 | What is the role of international technology cooperation in addressing climate change?

Technologies that are currently known but not yet widely used need to be spread around the world, and adapted to local preferences and conditions. Innovation capabilities are required not only to adapt new technologies for local use, but also to create new markets and business models. International technology cooperation can serve that purpose.

In fact, evidence shows that international cooperation on technology development and transfer can help developing countries to achieve their climate goals more effectively and, if this is done properly, can also help to addressing other sustainable development goals. Many initiatives exist both regionally and globally to help countries in achieving technology development and transfer through partnerships and research collaboration that include developed and developing countries, with a key role for technological institutions and universities. Enhancing current activities would help an effective, long-term global response to climate change, while promoting sustainable development.

Globalisation of production and supply of goods and services, including innovation and new technologies, may open up opportunities for developing countries to advance technology diffusion; however, so far not all countries have benefitted from the globalisation of innovation due to different barriers, such as access to finance and technical capabilities. These asymmetries between countries in the globalisation process can also lead to dependencies on foreign knowledge and providers.

Not all technology cooperation directly results in mitigation outcomes. Overall, technology transfer broadly has focused on enhancing climate technology absorption and deployment in developing countries as well as research, development and demonstration, and knowledge spillovers.

The Paris Agreement also reflects this view by noting that countries shall strengthen cooperative action on technology development and transfer regarding two main aspects: (i) promoting collaborative approaches to research and development; and (ii) facilitating access to technology to developing country Parties.