

Committee: Environmental Commission

Issue: Creating a framework for the transfer of technology to low-income countries to combat the effects of climate change

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Introduction

As stated in clause 5 in Article 4 of the United Nations Framework Convention on Climate Change (UNFCCC): “the developed country Parties and other developed Parties included in Annex II shall take all practicable steps to promote, facilitate, and finance, as appropriate, the transfer of or the access to environmentally sound technologies and knowhow to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. In this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties. Other Parties and organizations in a position to do so may also assist in facilitating the transfer of such technologies.” With the constant global debates on climate change, technology is repetitively mentioned in the making of a solution. No differently than the food crises of 1960 brought upon the green revolution, a technology transfer to improve global agricultural production, climate change is calling for a “technological revolution”. To subsidize and further prevent the detrimental effects of a global issue like climate change, the solution must be completed globally as well. Environmental research and knowledge thus needs to be available worldwide, so that all countries have access to those technologies.

Definition of Key Terms

Technology Transfer

The transfer of new technologies, for climate change this could include the transfer of weather forecasting systems, water purification systems, irrigation, sensors, etc., from the originator to a secondary source. In the sense of climate change technology transfer, this would refer to the transfer of technologies from a developed country to a less developed country.

Climate Change

A change in global patterns, whether regional or global, brought on by increased levels of carbon dioxide in the atmosphere in the mid to late 20th century.

Environmentally Sound Technologies

In comparison to other forms of technology, environmentally sound technologies (ESTs) can greatly improve our environment. They are typically designed to protect the environment, to be less of a pollutant, to be sustainably resourceful, to recycle wastes, and control residual wastes in an eco-friendly manner.

Mitigation Technology

Mitigation technology diminishes the severity or seriousness of an issue. It focuses on the root causes of climate change and combats those roots directly. In the case of climate change, mitigation technology is used to reduce the human emissions of greenhouse gases.

Adaptation Technology

Adaptation is the ability to readjust and modify. In terms of climate change, adaptation technology tackles the effects rather than the cause. It focuses on lowering the risks and consequences of climate change.

Intellectual Property

Creations of the mind, such as inventions, literary works, artistic pieces, designs, and the names, symbols, and slogans used by businesses. These creations are legally protected by means such as patents, copyrights, and trademarks.

Background Information

Technology transfers and the international community

To truly battle climate change, most of the technologies required have been categorized into two sections: those that help to mitigate effects and those that help to adapt our ability to respond to those effects. Necessary technologies for less developed countries to combat climate change would include innovation for infectious diseases, safeguards for floods, improved weather forecasting, supercomputing, improved irrigation systems, environmental sensors, water purification, and recycling systems.

It has been agreed that in order to create a successful framework for globally combating climate change, the transfer of technology must have a key role. The transfer of environmentally sound technologies is vital. Developed countries who own those technologies have the responsibility to transfer that knowhow to less developed countries who cannot attain the resources and information otherwise. The process of the technology transfer is still stuck mostly in the negotiation stage between countries and the projects that have been implemented thus far have been on a severely small scale.

Issues behind a technology transfer

Though the importance of a technology transfer has been recognized in order to globally combat climate change, many issues still arise. The actual transfer of technologies to low-income countries is far more complex than it may appear on paper. One of the main barriers for the transfer is that the governments of developed countries do not own the intellectual property of the technology. The companies creating and researching the technology do. If a country manages to surpass that barrier and negotiate with the company to surrender their intellectual property, there are still many hurdles to jump. Building and installing the technology into a low-income company that lacks the capital and infrastructure remains as a huge barrier. Thus, most of the technology transfer discussions are centered around simply figuring out how to actually do it.

However, there is an even greater problem. How does a country or company transfer technology when the technology is not even there to be transferred. Though developed countries have the advantage over low-income countries to actually develop and invent environmentally sound technologies, many of those countries are actually stuck in that phase. Countries cannot transfer technologies that are still running under trial.

Environmentally sound technologies

Geothermal energy power plant in Iceland

Though all the environmentally sound technologies that are required to help low-income countries combat climate change have yet to be invented, some are either nearing or are already ready for use. In Iceland, the country is able to drill down into the live volcanoes beneath its surface for geothermal energy. However, this practice has led to the heightened release of carbon dioxide into the atmosphere. Though geothermal energy, in comparison to other forms of energy, is relatively clean, Iceland is hoping to reduce its emissions completely. Thus, outside of Reykjavik, a geothermal power plant has discovered how to recapture its released carbon dioxide. By placing it deep inside the Earth the CO₂ becomes trapped due to a reaction between the H₂O and minerals underneath. With this technology the Icelandic power plant releases zero emissions by turning carbon dioxide, greenhouse gases, into rock deep below Earth's surface.

Start-up in Switzerland for carbon capture

Iceland is not the only developed country to have discovered a mitigating and environmentally sound technology to combat climate change that could be, hypothetically, transferred to low-income countries. A Swiss start-up, Climeworks, installed a machine that effectively “sucks carbon dioxide out of the air”. The machine is capable of capturing CO₂ from the atmosphere and, like the Icelandic power plant, eventually transform it into stone by sending it below or by recycling it. The machine uses a filter to take in carbon dioxide, heating it to a concentrate to create CO₂ gas, and releasing the CO₂-free air back into the atmosphere. With this technology, Climeworks has already removed 5 metric tons of carbon dioxide from our atmosphere. Their goal is that further installations will result in the removal of 1% of all global emissions, roughly 400 million metric tons of carbon dioxide in the atmosphere.

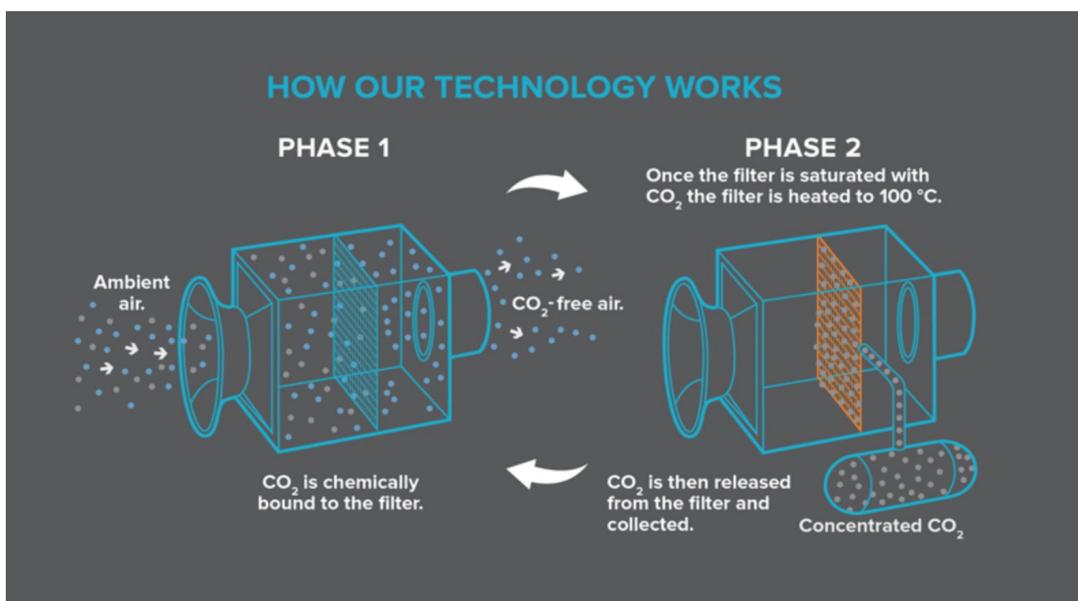


Figure #1. An explanation of the carbon-capture machine (Source: Climeworks)

The importance of a technology transfer by means of combating climate change

Climate change is borderless. Every country shares the consequences and thus, for the benefit of every country and every individual, the knowledge on how to reduce or completely mitigate those consequences should be as equally universal. For that to be a reality, technology transfer is the answer. For low-income countries left with no choice but to continue with the same detrimental processes, climate change will never be successfully eradicated. All nations will have to come together in collaboration with recognized responsibility and accountability, so that the existing environmentally sound technologies are available to everyone.

Timeline of Events

Date	Description of event
1989	Carbon Capture technologies program initiated at MIT
1991	The inception of the Global Environment Facility.
1994	The United Nations Framework Convention of Climate Change enters into force
2014	Hellisheidi geothermal plant discovers how to turn greenhouse gases into stone
2015	The Paris Climate Agreement was signed to keep global average temperatures below 2 degrees.
2017	Climeworks launches its first commercial plant to capture and recycle CO2 from the atmosphere

UN Involvement, Relevant Resolutions, Treaties and Events

The United Nations Framework Convention on Climate Change is the most relevant United Nations treaty towards the issue of creating a framework for the transfer of technologies. The convention was adopted by the Intergovernmental Negotiating Committee on May 9, 1992. Currently the convention has 197 parties, and 166 signatures. The remaining parties are granted to accede to it whenever they chose. The Convention officially came into force on March 21, 1994.

- United Nations Framework Convention on Climate Change, 9 May 1992
- Protection of Global Climate for Present and Future Generations of Mankind, 6 December 1988, **(A/RES/43/53)**
- Climate Change and Its Possible Security Implications, 3 June 2009, **(A/RES/43/53)**
- The Kyoto Protocol, 11 December 1997
- The Paris Agreement, 4 November 2016

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