Keeping our Planet Cool, Strengthening Food Security with Sustainable Cold Chains

44th Meeting of the Open-Ended Working Group of the Parties of the Montreal Protocol

- Lack of an effective cold chain is estimated to directly result in the loss of 526 million tonnes of food production or 13% of the global food supply. At the same time, refrigeration equipment used in the food cold chain is responsible for 1% of global GHG emissions. If access to cold chain is not provided in a sustainable way, emissions will rise.
- We need a more efficient, secure, and resilient food system worldwide. Cold chains are a critical infrastructure impacting not only the agriculture but health, energy, and overall economic development. It is necessary to look at the water-energy-food nexus to deliver sustainable food cold chains.
- The COVID-19 pandemic has accentuated the need for vaccine refrigeration but also for science-based international cooperation that deliver common ground for multilevel decision-making.
- Developing sustainable cold chains is more than just procuring and installing solar cooling systems in farms or chillers using climate-friendly refrigerants at supermarkets. Food must be kept at a certain temperature all the way from the farm to the domestic fridge, and both the static and the mobile elements must work seamlessly together.

- Creating a sustainable cold chain is a wicked problem with diverse drivers and barriers, all interconnected and different by country – from post-harvesting inventory concerns to packaging and handling issues, from business models that underpin investments to rising temperatures.
- We need to quantify and value the broader socio-economic impacts of sustainable cold chains on communities. The report “Sustainable food cold chains” highlights the complexities of the food cold chain and explores how it can evolve in a sustainable way, especially economically and socially.
- Governments should work with industry to properly benchmark energy and greenhouse gas emissions savings from demonstration pilots. This cannot be done without data.
- Digital twins are also key to testing projects’ resilience, through holistic system approaches. They help envision future needs and make sure that systems designed today will also be reliable in 30-40 years.
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- When developing strategies to develop cold chains, it is essential that no one is left behind. By expanding access to cold chains especially to women and girls, evaluating potential unintended consequences, implementing inclusive solutions at a local level.

- The Government’s role consist of motivating users and pioneers to lead the change – showcasing case studies is a starting point, but also bringing together different players, promoting collaboration and coordination.

- Phasing out high GWP refrigerants and increasing the efficiency of cooling equipment is a must. This should be a priority policy action area for governments. But, at the same time, industry needs installers that can make sustainable cold chain systems run as they should and in a safe manner: governments need to support trainings and upskilling of technicians.

- Efficient technologies exist, but it is important to raise awareness around their benefits such as improving health and economic opportunities for individual farmers and the agricultural system. Industry cannot make change to happen on its own, it needs the help and vision of policymakers for this reality to come into place and push for market transformation.

- Data is the starting point for investment in sustainable cold chain systems to happen. Opportunities are there, but we need to demonstrate that it is safe to invest. For example, pilots can help demonstrate worthiness and attract financiers.

- Fundings must be directed towards farmers and shop owners in the form of new business models. These include Public Private Partnerships, Cooling as a Service, and cooperatives made of financial institutions, NGOs, and agribusiness - but not subsidies. Pilots are demonstrating technologies all the time, but what is interesting to prove is the long-term economical, social, and environmental effectiveness of the business models that leverage them.

- Governments can actively pursue an integrated approach to overcome siloed approaches. Policy strategies and plans need system-level thinking, through a multistakeholder and multisectoral approach, incentivizing clear communication at all stages.

- National Cooling Action Plans are a good starting point toward more comprehensive cooling and cold chain action.

For more information and to access the recording, please visit the Cool Coalition website.