



International Solar Alliance (ISA)  
**Briefing Note**  
**ISA Solar Cooling Initiative (I-SCI)**







## Background

- ISA is a treaty based International Inter-governmental organisation through which Member countries collectively address key common challenges to the scaling up of solar energy in line with their needs.
- Majority of ISA Member countries have large agrarian population, due to which agriculture and allied sub-sectors form a substantive part of the socio-economic agenda of these countries. The objective of the first programme of the International Solar Alliance (ISA), Scaling Solar Applications for Agriculture Use', which was launched on 22<sup>nd</sup> April 2016 is to adopt common methodologies and procedures for needs assessment for decentralisation of solar application for agricultural and rural use, based on best practices and with the guidance of a pool of public technological research centres from Member countries. Integrated 'farm to fork' cold supply chains can enable millions of small and big rural farmers transport their products to higher value, more distant markets, to reduce wastage and thus increase their income and prospects for economic success. Access to cooling is also essential for broader economic development.
- The growth of the agricultural economy is linked to the modernisation of post-harvest management systems, concurrent with logistics connectivity with markets. This is particularly important for perishable produce which can otherwise suffer up to 40% loss in the supply chain from farms to terminal markets.
- Developed appropriately, cold-chain logistics provides for physical connectivity & direct access to optimal markets. This is vital to effect a multi-fold increase farmers' revenues and ensure that food produced comes to gainful end-use. Non-availability of integrated cold-chain systems, results in food loss, degrades the overall income to farmers, and in turn dis-incentivises his/her efforts to produce more.
- In India, Hon'ble Prime Minister stated his vision for doubling farmers' income, to set forth a strategic direction for future development. Subsequently, the **Committee for Doubling Farmer's Income** has identified agri-logistics as a vital component in its farm income strategy. Recently, India also launched its national cooling action plan titled **India Cooling Action Plan (ICAP)** in March-2019 in following up its commitments under the amended Montreal Protocol. Other Member countries are also in the process of preparing their national cooling action plans.
- ISA realises that sustainable solar energy has potential to add far-reaching value to the cold chain infrastructure. To this end, ISA is taking the lead through this "**ISA Solar Cooling Initiative (I-SCI)**".



# About Project ISCI

- ISA is taking this initiative to help Member countries to develop solar energy linked cold-chains and cooling systems for agricultural uses.
- Cooling systems are typically energy intensive, use of solar powered technologies can add to energy efficiency and reduce environmental impacts. In the case of cold-chains, introduction of solar derived energy hybrids would also aid in its development, and also contribute to reducing GHG emissions arising from food loss and waste (global estimate of 4.4 giga ton eCO2 per annum).
- Cold-chain connectivity and reduction in food loss would ensure that the given volume of production generates more revenue and increases farmers' economic wellbeing.
- The availability & efficacy of vaccines is important for healthcare of rural communities and livestock. This too is dependent on availability of cold-chain delivery systems. Cooling therefore, aids in unlocking a better life and caters to welfare needs of rural disconnected populations.
- I-SCI project provides a rare opportunity to simultaneously address three internationally agreed goals: the Paris Climate Agreement; the Kigali Amendment to the Montreal Protocol; and the Sustainable Development Goals (SDGs).





# Key Objectives of ISCI

- ISA aims to adopt a systems approach with the objective to make cold-chains carbon neutral. It shall do so by taking the initiative to combine the push for solar energy along with the adoption of super-efficient cooling technologies.
- As tropical countries and other member states of ISA progress on developing their cold-chains, I-SCI will empower them with the capacity and ability to leapfrog to carbon neutral systems, which have the lowest GWP (Global Warming Potential) impact be it direct or indirect and incorporate solar energy (direct or derived).
- I-SCI will be making the following interventions:



A. Develop associated innovative finance and business models to create integrated cold-chain solutions - that bring economic value to farmers/ producers and help contribute to SDGs such as access to nutrition and health, by promoting appropriate solar cooling technologies to secure the sensitive products while connecting them with consumers;



B. Encourage the use of sustainable lower-GWP & energy efficient cooling technologies, made feasible through solar energy.



C. Mobilize finance after assessing and aggregating demand for solar cooling and cold chain systems with the help of stakeholders and partners



D. Promote knowledge dissemination, applied research, capacity building & training, and industry engagement to encourage adoption of affordable cooling solutions with special emphasis on post-harvest pre-conditioning facilities; and,



E. Work with governments, industry, technical institutes, national and international implementing agencies to develop a future ready workforce with the ability to properly design, install and maintain solar cold-chain systems in ISA Member countries.

This I-SCI has knowledge support from India’s National Centre for Cold-Chain Development (NCCD), a PPP structured autonomous think tank, facilitated by the Government of India.





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