Challenges in the Scale-up of Voluntary Carbon Markets

- Post-2020 markets under the Paris Agreement will be built through a bottom-up approach, as each party to the Agreement is required to track the greenhouse gas (GHG) emission reductions (or removals) achieved—and has considerable leeway to determine how this will be done.

- The bottom-up nature of future carbon markets comes with increased complexity and diversity of reporting and verification approaches for GHG emissions inventories and mitigation outcomes:
  - Limited transparency
  - Limited liquidity
  - Market fragmentation and inaccessibility
  - Quality variability
  - Lagging methodologies

- There is significant potential for digital infrastructure to underpin and streamline the functioning of post-2020 carbon markets.

Data and trade infrastructure is a precondition to scale a transparent and inclusive carbon market. Climate Warehouse is piloting the digitization of the carbon market ecosystem.

Digital work-flow: project preparation from document development, approval, validation to registration in applicable standards.
World Bank’s Climate Warehouse Program: Building an End-to-End Digital Ecosystem for Carbon Markets

Designing, prototyping, piloting and validating digital infrastructure for the scale up of carbon markets and finance

- d-MRV systems: Piloting
- National carbon registries: Designing & piloting
- Tokenization instruments: Prototyping

Aggregating registry data in a blockchain-enabled platform

https://climateactiondata.org/
World Bank Climate Warehouse Program: Building an End-to-End Digital Ecosystem for Carbon Markets

Pillar 1: Piloting and Developing Global Public Goods

Making digital infrastructure for carbon markets available to client countries through development, testing and prototyping of innovative digital infrastructure for carbon markets.

**Work Streams:**
- **Digital for Climate (D4C) Working Group.** Collaboration with EBRD, UNDP, UNFCCC, and WB for a modular and interoperable end-to-end digital ecosystem for carbon markets.
- **Digital Monitoring, Reviewing and Verification (dMRV) systems.** Piloting the connection between dMRV systems with national carbon registries and national MRV systems.
- **National Carbon Registries.** Development of opensource off- and on-chain transaction registries.
- **Tokenization instruments.** Development of tokenization instruments to tokenize carbon markets.
- **Climate Action Data Trust (CADT)**

Pillar 2: Global Knowledge and Capacity-Building

Support countries and jurisdictions to in implementation of digital infrastructure for carbon markets needed for GHG mitigation and NDC implementation.

**Work Streams:**
- **Develop knowledge base on digital infrastructure and facilitate information exchange through technical discussions and knowledge dissemination**
- **Assist countries to identify and implement best practice approaches and, where relevant, achieve compatibility in design to support the development and linking of digital infrastructure for carbon markets**
- **Encourage international and national cooperation, and inform the domestic and global policy discussions on GHG mitigation by sharing lessons learned and providing a platform for collective innovation on digital infrastructure products**