



Carbon Markets

UNITED NATIONS DEVELOPMENT PROGRAMME

What are Carbon Markets



- **Carbon markets are trading systems in which carbon credits are sold and bought.**
- **Companies or individuals can use carbon markets to compensate for their greenhouse gas emissions by purchasing carbon credits from entities that remove or reduce greenhouse gas emissions.**
- **One tradable carbon credit equals one tonne of carbon dioxide or the equivalent amount of a different greenhouse gas reduced, sequestered or avoided.**
- **When a credit is used to reduce, sequester, or avoid emissions, it becomes an offset and is no longer tradable.**
- **Broadly two types of markets: Compliance and Voluntary Markets**

Some Examples of Carbon Markets

- One type of compliance market emissions trading systems (ETS) operating on a “cap-and-trade” principle
- The European Union launched the world's first international ETS in 2005. In 2021
- China launched the world’s largest ETS, estimated to cover around [one-seventh of global carbon emissions](#) from the burning of fossil-fuels.
- Many more national and subnational ETS are now operating or under development.
- The [Clean Development Mechanism \(CDM\)](#), adopted under the [Kyoto Protocol in 1997](#), is another well-known example of an international compliance market.



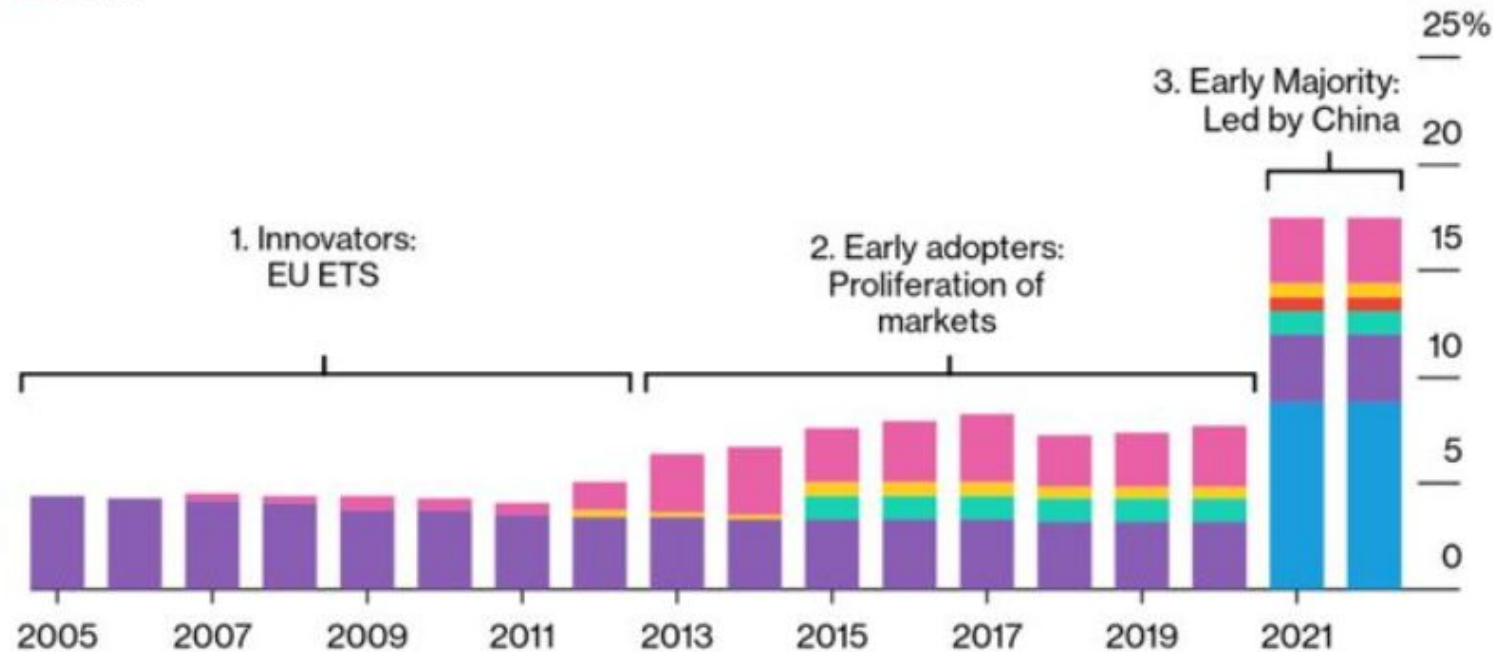
Some Examples of Carbon Markets



Expanded Reach

Almost a fifth of global emissions are now covered by a carbon market

■ China's national program ■ European Union ■ South Korea ■ Germany ■ California
■ Other



Source: World Bank, BloombergNEF.

Note: 'EU ETS' refers to the EU Emissions Trading System.

BloombergNEF



KEY STATISTICS ON REGIONAL, NATIONAL AND SUBNATIONAL CARBON PRICING INITIATIVE(S)

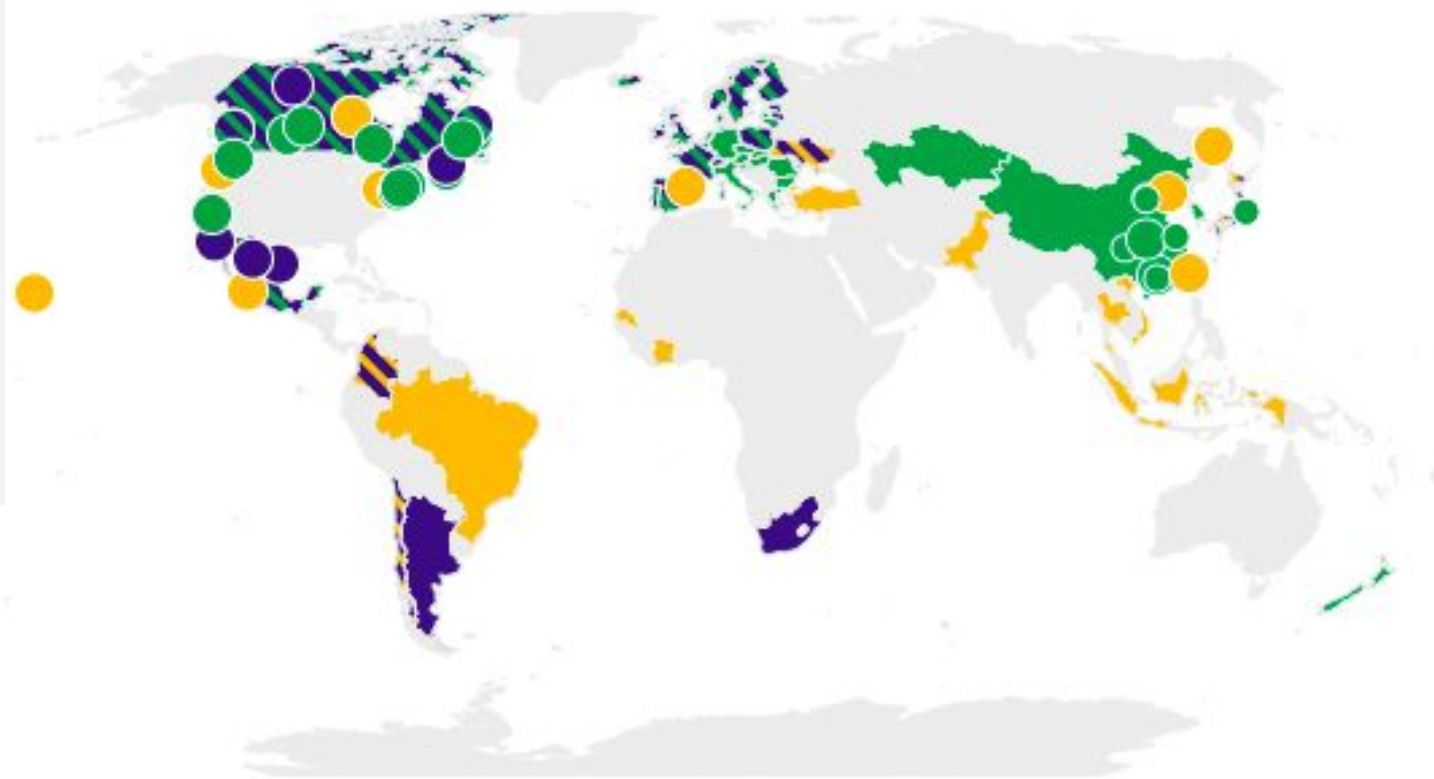
73 Carbon Pricing initiatives implemented

39 National Jurisdictions are covered by the initiatives selected

33 Subnational Jurisdictions are covered by the initiatives selected

In 2023, these initiatives would cover **11.66 GtCO₂e**, representing **23%** of global GHG emissions

Summary map of regional, national and subnational carbon pricing initiatives



- ETS implemented or scheduled for implementation
- ETS or carbon tax under consideration
- ETS implemented or scheduled, ETS or carbon tax under cons...
- Carbon tax implemented or scheduled for implementation
- ETS and carbon tax implemented or scheduled
- Carbon tax implemented or scheduled, ETS under considerati...



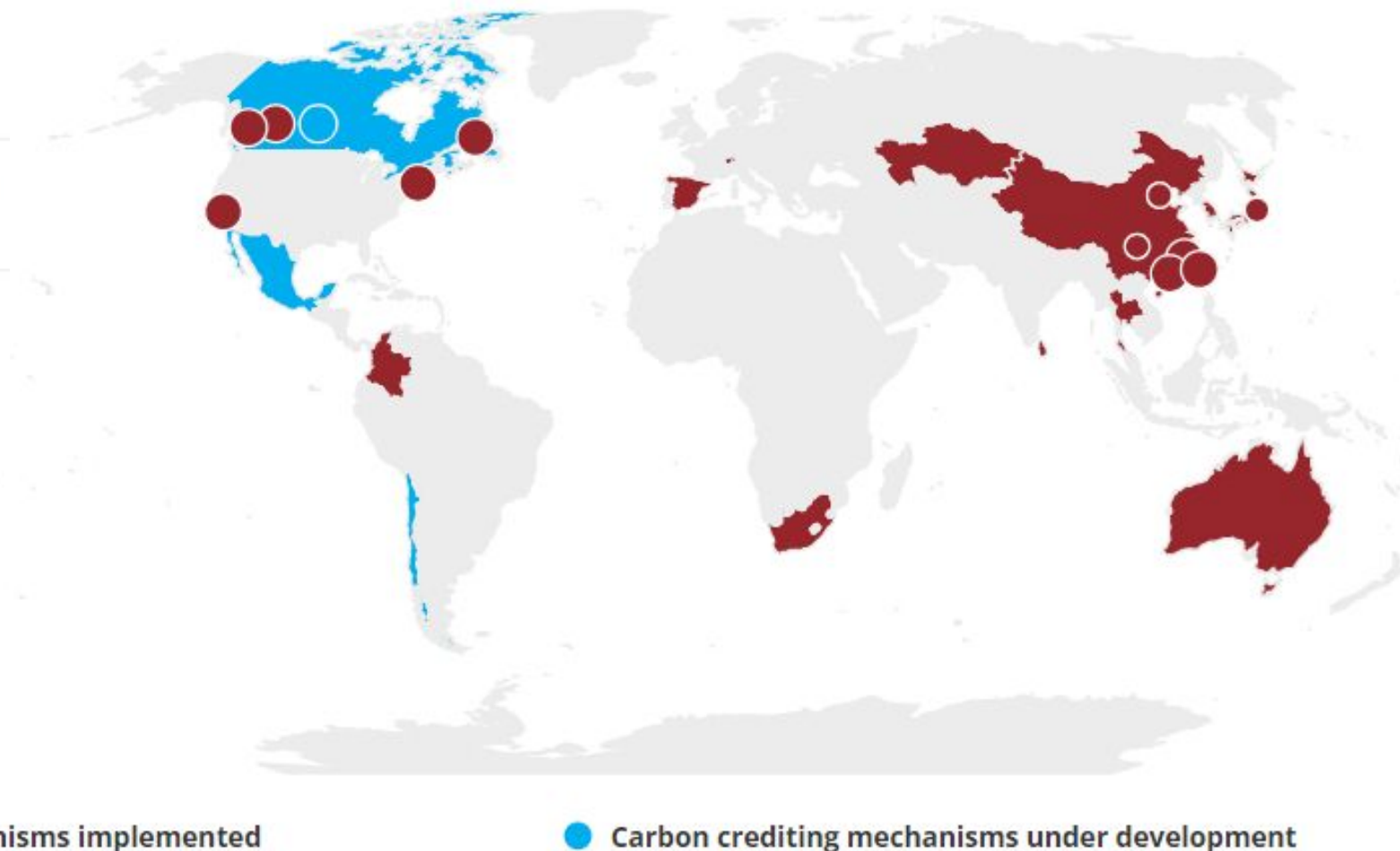
KEY STATISTICS FOR 2023 ON REGIONAL, NATIONAL AND SUBNATIONAL CARBON CREDITING MECHANISMS

27 Carbon crediting mechanisms implemented

5 Carbon crediting mechanisms under development

Included here are regional, national and subnational mechanisms that have issued carbon credits that can be used under mandatory carbon pricing initiatives

Summary map of regional, national and subnational carbon crediting mechanisms



Global Carbon Market

- The compliance carbon market makes up the majority of the value in carbon credits. As of 2021, it had a market value of \$851 billion, a 164% increase from 2020. And the market growth is expected to continue as carbon pricing increases due to increased demand to meet government regulations.
- The World Bank estimates that a carbon price of \$50-100 per metric ton of carbon dioxide is required by 2030 to meet the temperature goals of the Paris Agreement
- However, only the EU, UK and New Zealand currently have prices within or above this range, with other major markets falling well short. Prices in China, the world's largest market in terms of emissions covered, are languishing below \$10 per ton of CO₂.
- In 2021, the VCM had reached a market value of \$2 billion. By 2030, it is expected that the VCM to have a market value of \$10 billion to \$40 billion.





Carbon Finance and Emissions targets

- Carbon finance will be key for the implementation of the NDCs, and the Paris Agreement enables the use of such market mechanisms [through Article 6.](#)
- That's why, around the world, interest in carbon markets is growing – [83 percent of NDCs](#) state the intent to make use of international market mechanisms to reduce greenhouse gas emissions.
- It is estimated that the private sector will have to shoulder some 85 to 90 % of the investments needed to transform our economies to zero carbon by 2050, one of targets outlined in the Paris Agreement
- Developing countries will need up to US\$6 trillion by 2030 to finance not even half of their climate action goals



- Ghana and Switzerland, along with Vanuatu, have approved at COP27 the first-ever voluntary cooperation under Article 6.2 of the Paris Agreement called the Internationally Transferred Mitigation Outcome (ITMO).

- Design and implementation of the project by UNDP

- By entering into bilateral agreements with Ghana and Vanuatu, Switzerland will reduce its GHG emissions by using ITMOs.

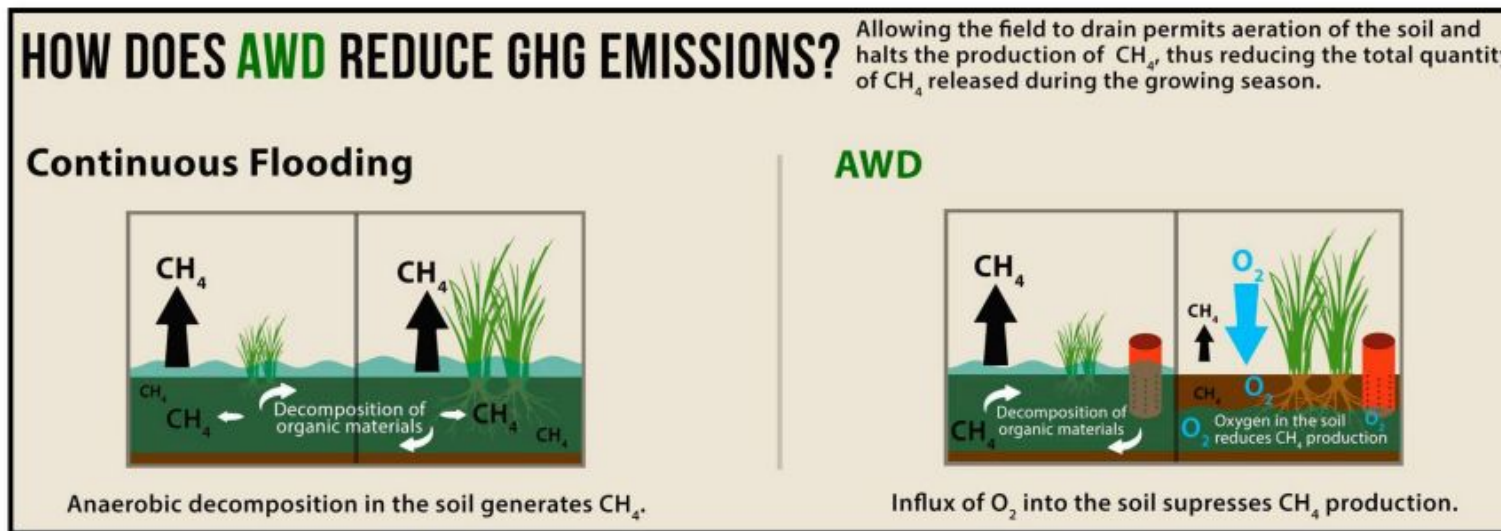
- The project in Ghana will help thousands of rice farmers practice sustainable agriculture to cut methane emissions. These farmers cover about 80% of Ghana's rice production.

- The intervention will also provide extra income through carbon revenue to farmers for increased resilience and improve efficiency of water use.

Signing of First-Ever ITMOs

Case Study- Application of AWD in Ghana

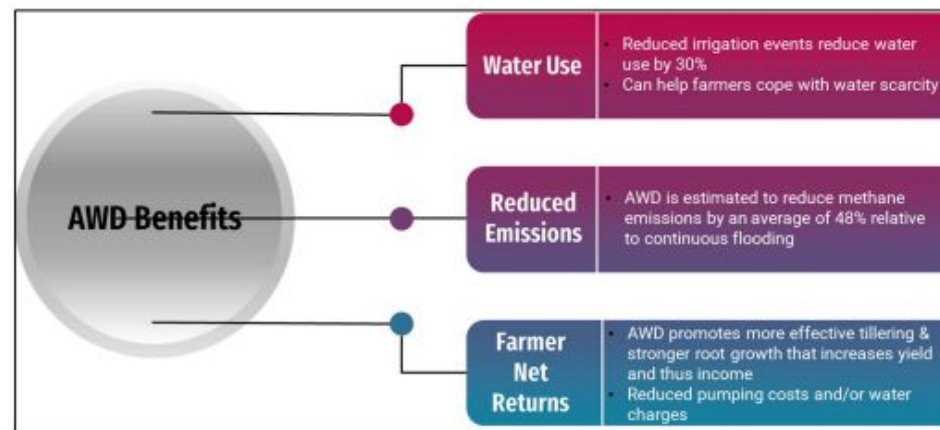
AWD – Alternate Wetting and Drying



Promotion of Climate Smart Agriculture Practices for Sustainable Rice Cultivation in Ghana (2022 – 2030)

Version 1, April 2023

Benefits of AWD



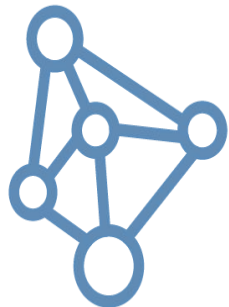


UNDP's response 1: Article 6 Readiness Support



Regulatory & Institutional Readiness Support

- Development of Art6 Regulatory and Institutional Framework
- Capacity building (self-paced courses, guidance manuals, technical trainings)
- Ad-hoc project approval support for eligible countries (with bilateral agreements in place)
- Dissemination & scoping of private sector opportunities for Art6.2



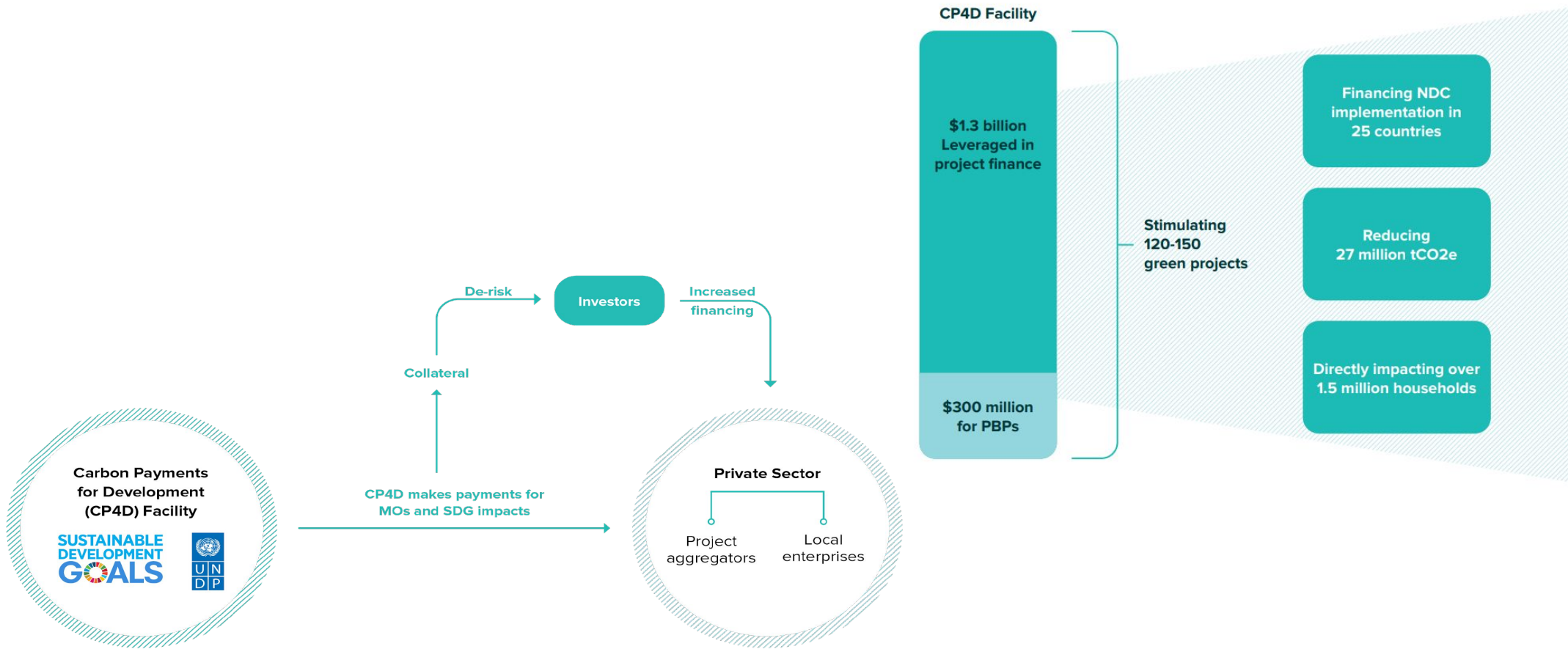
Digital Infrastructure:

- Carbon Cooperation platform for ITMO process flow
- National registries built open source as Digital Public Good
- WebApps and Video Monitoring of projects generating ITMOs

UNDP's response 2: Financial Incentives for Implementation



Figure 2. CP4D sizing & ambition
Source: Own creation



Examples of UNDP existing support to countries on carbon markets

Brazil – support setting up the national authority responsible for managing the domestic carbon market and Article 6 approvals.

Technical support to subnational states in the Amazon region to comply with the ART/ TREES standard for REDD+ transactions with LEAF (voluntary carbon markets).

Cambodia – support to the national government in setting the NDC trajectory and assessing the potential for both compliance and voluntary carbon markets. For the forest sector, support in nesting projects to the national framework for REDD+.

Ghana – support on Article 6.2 ITMO transactions with the government of Switzerland. Support to the national government for their access to LEAF through ART/ TREES, UNDP will be the financial intermediary.

Kenya – support on setting up the regulatory framework for carbon markets/ Article 6 readiness; interest on forest sector.



Thank you!

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