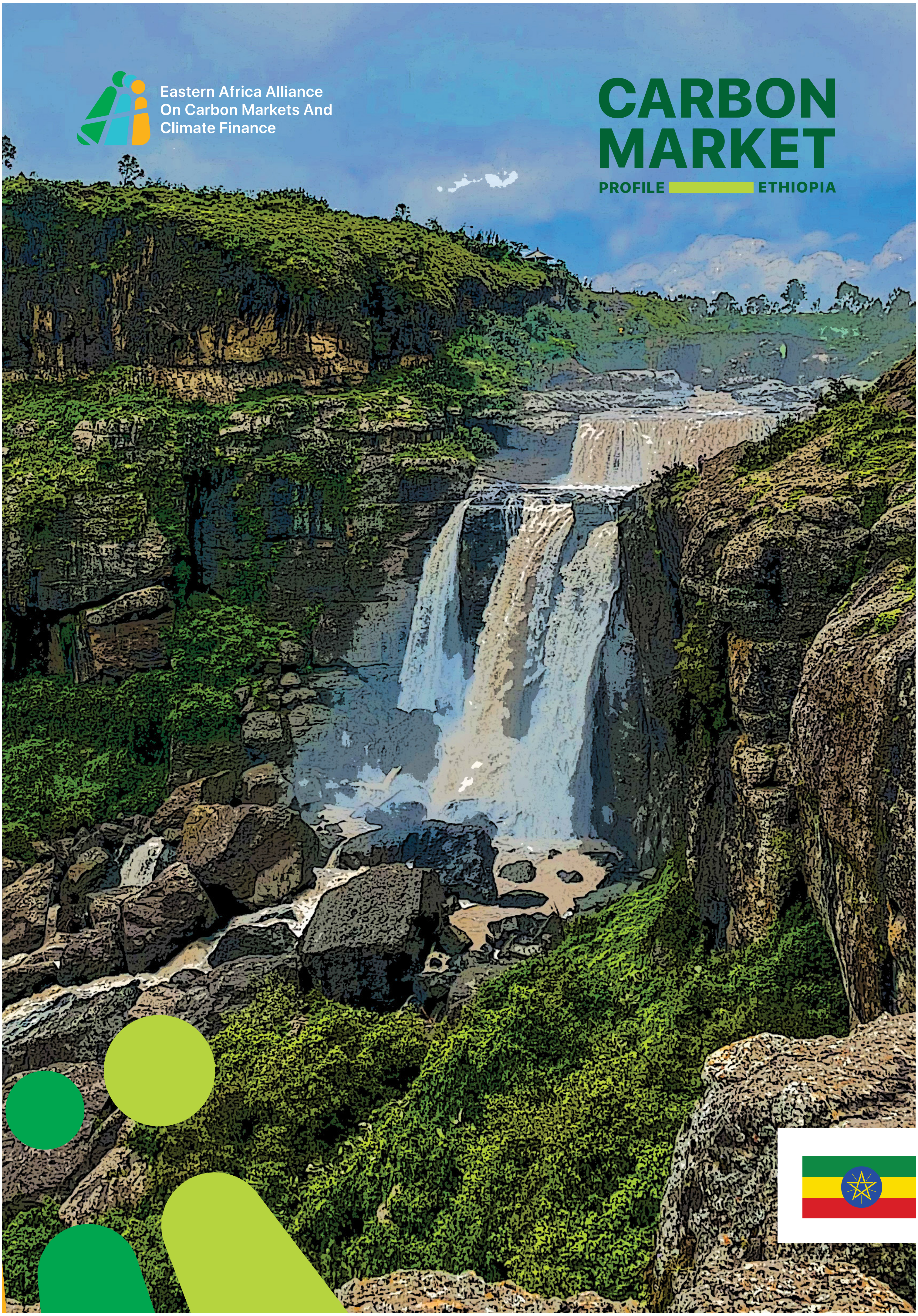
Eastern Africa Alliance On Carbon Markets And Climate Finance

CARBON MARKET

PROFILE ETHIOPIA



1. Introduction/Executive summary

Role of carbon markets in NDC

- Ethiopia submitted its updated NDC on July 23, 2021, based on a current technical information, policy review and data, as well as an update to the Climate Resilient Green Economy Strategy (CRGE), Ethiopia's primary strategy for climate action. The NDC targets are also fully aligned with the country's flagship 10-Year Development Plan (10YDP) for 2021-2030.
- The updated NDC commits to reduce emissions by 68.8% (-277.7 Mt CO2eq) compared to BAU projections by 2030. This represents an ambition increase of 4.8% below the reductions in the previous NDC. 14% (-56 Mt CO2eq) of the updated mitigation target are unconditional and 54.8% (-221.7 Mt CO2eq) are conditional on international support.
- The updated NDC also specifies 40 prioritized adaptation interventions from various sectoral strategies, the National Adaptation Plan (NAP), and the NAP Implementation Roadmap (2019).
- Full NDC implementation requires USD 316 billion for the next 10 years. The mitigation interventions identified in the updated NDC require USD 275.5 billion and adaptation actions require USD 40.5 billion. The financial estimates are derived from climate resilience plans of sectors and Ethiopia's 10-year national development plan, which aims to build a climate resilient green economy by 2030. Ethiopia is committed to finance 20% of the total finance required for NDC implementation, whilst 80% will be conditional on receiving international support, including from carbon markets and other sources of finance .
- The updated NDC continues to express Ethiopia's strong interest in voluntary cooperation in emerging international carbon market governed by Article 6, while highlighting the importance of environmental integrity and robust accounting.

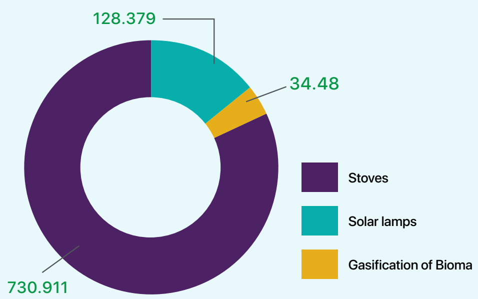
Carbon Market Portfolio – Key insights

- In total over 2 million carbon credits have been issued in Ethiopia from both the Clean Development Mechanism (CDM) and VCM standards.
- Ethiopia hosts only two CDM projects and six Programme of Activities (PoAs) with 4 activities on improved cook stoves and one activity each for Biomass energy and solar lamps respectively. There are 16 total CPAs (component project activity) with all being included in the PoAs post 2012 and the most recent inclusion being in 2018. These activities have issued close to one million CERs .
- Ethiopia has 35 registered VCM activities that have issued over 10 million emission reduction units. The forestry sector has the highest issuances with over 9.1 million credits issued under VCS.
- Improved cook stoves have the largest mitigation potential in the NDC, aiming at reducing over 50 million tCO2e annually by 2030. These cooking initiatives also represent dominant sub-sector in the Ethiopian and African carbon market portfolio (CDM and VCM standards).
- Ethiopia has embarked on readiness preparations for participating in Article 6.

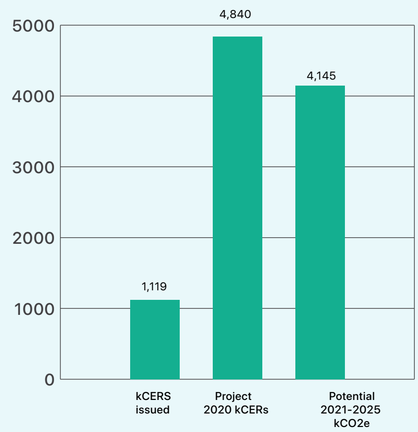
2. CDM portfolio and performance

- There are 18 registered CDM activities: 2 single project activities (methane avoidance, municipal waste) and 6 PoAs (4 improved cook stoves, 1 biomass and 1 solar programme) with a total of 16 CPAs. Currently there is one PoA under validation which would support e-mobility.
- For all CDM activities, improved cook stove PoAs have issued over 730,000 CERs (82%) followed by solar lamps with over 128,000 CERs (14%) and biomass gasification with over 34,000 CERs (4%).
- Total projected pre-2020 mitigation potential of registered activities reaches 4.8 million CERs, including around 3.8 million CERs from PoAs and 1 million CERs from projects. The 2021-2025 mitigation potential of current CDM activities could reach 4.1 million emission reductions of which 3.8 million are from PoAs and 1 million from projects.

CDM issuances by sub - sector



Projected CDM issuances



Volume of CER issuance and potential of currently registered CDM activities by sector

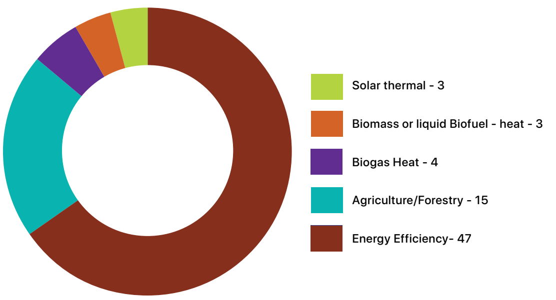
Activity Type	Sub-sector	No. of PA	No. of PoA	No. of CPA	kCERs issued	Projected 2020 ktCO2e	Mitigation Potential between 2021-2025 ktCO2e
Overall		2	6	16	1119	4840	4145
Landfill gas	Landfill flaring	1			-	735	234
Methane avoidance	Wastewater	1				285	713
Reforestation	Reforestation	(1)*			(255)*		
EE Households	Stoves		4	11	731	3,233	2412
	Solar lamps		1	3	128	215	317
Biomass energy	Gasification of biomass		1	2	34	371	469

*deregistered

CDM transition potential

- Most Ethiopian CDM activities may be eligible for transition, provided UNFCCC rules remain as in current draft documents. Once the Article 6.4 Supervisory Body has made available the transition process, Ethiopia will need to establish criteria and an approval procedure for activity transition aligned with UNFCCC rules. At the same, there is significant leeway for host countries to determine how CDM activities may contribute to their NDC. While Ethiopia has only attracted few CDM projects, most PoAs have been registered only recently and could be significantly scaled up with additional CPAs if the PoA frameworks would transition to Article 6. Therefore, the post-2020 emission reduction potential may be much higher than the currently available data if several PoAs successfully transition and expand new CPAs.
- Only 1 CDM project registered before 2012 (reforestation), that has since been de-registered. Between 2013 until 2016, 2 projects and 6 PoAs were registered.
- The 2 CDM projects activities will reach the end of their non-renewable crediting period in 2023 and 2028 respectively.
- The CDM has 1,148.76 pre 2020 vintage credit issuances from 1 project activity and 6 CPAs; and no post 2020 vintage issuances yet.

CHART 2 | **Voluntary Carbon Standards**



3. Voluntary carbon market portfolio and performance

Gold Standard (GS)

Ethiopia has a total of 35 registered VCM activities that have issued 9,932,168 credits.

- Hosts 33 GS activities (29 VPAs and 4 standalone projects) with a total issuance of 973,197 credits
- GS issued 790,877 verified emission reductions (VERs); and 157,862 issued Planned Emission reductions (PERs)
- Of the 33 GS activities, 1 VPA has issued 24,458 Certified Emission Reductions (CERs)
- 62% of GS credits are in the energy efficiency sector
- GS has 755,998 pre 2020 vintage credit issuances from 32 activities: and a total of 34,879 post 2020 vintage credit issuances from 23 activities

VERRA/Voluntary Carbon Standard (VCS)

- One registered project Bale Mountains Eco-region REDD+ project, with 9.1 million VCUs issued.
- Verra has 4,002,206 pre 2020 vintage VCUs issued and 5,139,085 post 2020 vintage VCU issuances from their registered project

Plan Vivo

- One registered project, with 73,677 credits issued.
- Plan Vivo has 49,714.25 pre 2020 vintage credit issuances and 23,963.75 post 2020 vintage credit issuances from their registered project.

Showcase Activity

The Humbo Ethiopia Assisted Natural Regeneration Project (Ref No. 2712) has engaged local farmer in seven community cooperatives to improve their land management by assisting natural regeneration of indigenous, locally adapted species. Farmers have agreed to close defined areas to reduce the pressure on vegetation from wood harvesting and grazing, instead pruning existing trees and shrubs for sustainable wood fuel collection. The project was the first African CDM forestry project, initially supported by the World Bank's BioCarbon Fund, and has restored 2,700 hectares of previously degraded soil and boosted crop yields. Its approach is a model for farmer-managed natural regeneration efforts in Niger, Chad, and Burkina Faso. Under the CDM, the project has 255,000 CERs issued before de-registration in May 2020 as CDM forest credits were found to be not appealing to market participants. The project was re-registered under Gold Standard with 104,067 VERs issued to date. The case study is relevant as it illustrates broader issues with the forest sector in the CDM that are relevant for the entire East African subregion and beyond

Source: FMNR n.d.

4. Article 6 readiness and piloting

4.1. Ethiopia's Article 6 readiness

- Ethiopia's Environmental Protection Authority (EPA) serves as DNA for CDM.
- Several development partners and capacity building stakeholders have already been supporting Ethiopia on carbon market readiness, including the Eastern Africa Alliance, GIZ Global Carbon Markets project, the Climate Finance Innovators project, as well as the World Bank Carbon Initiative for Development (Ci-Dev).

4.2. Article 6 piloting

- As early as 2013, Ethiopia and Japan agreed to cooperate bilaterally through the Joint Crediting Mechanism (JCM). Three methodologies have been approved (2 renewable energy, 1 biomass combined heat and power plant), but no project has been registered so far (JCM Ethiopia - Japan, n.d.);
- The World Bank Ci-Dev has announced to also apply the Standardized Crediting Framework to existing Ethiopian PoAs (biogas and off-grid renewable energy) (UNEP CCC, 2022b). The Development Bank of Ethiopia (DBE) is the CME. Ci-Dev purchases carbon credits generated from around 42,000 biogas digesters as part of the National Biogas Program. Ci-Dev has already signed an emissions reduction purchase agreement (ERPA) with the DBE on July 14, 2016, for the purchase of approximately 800,000 CERs to be generated through to the end 2024 under the Ethiopia Off-Grid Renewable Energy PoA (Ci-Dev n.d.). the World Bank also intends to roll out its Standardized Crediting Framework (SCF), potentially applied to these two PoAs for biogas and renewable energy, which means that Ethiopia has already two potential Art.6.2 pilot activities under implementation. This is particularly noteworthy because these PoAs are well integrated with national sectoral policies (National Biogas Program, National Electrification Plan) and fully aligned with the updated NDC. This constellation offers great potential for upscaling once the registered CDM PoAs are transitioned to the Art.6.4 mechanism as well as integrated into the SCF framework. With its updated NDC, Ethiopia has expressed a strong interest in participating under the market-based mechanisms and intends to sell ITMOs to finance achieving the conditional mitigation targets.

CORSIA Potential

- CORSIA eligible activities: CDM: 1 project (wastewater) / 7 CPAs (2 stoves, 3 solar lamps and 2 biomass gasification); Gold Standard: 12, VCS: 1
- Ethiopian Airlines does not participate in CORSIA's pilot phase (2021-2023, however they will have to mandatorily participate in CORSIA in second implementation phase (2027-2035) (Verifavia n.d.).

References

Ci-Dev (n.d.): Programs, https://www.ci-dev.org/programs (accessed September 2022)

FMNR (n.d): Humbo forestry project https://fmnrhub.com.au/projects/humbo/#.YzLFDnZBw2w (accessed September 2022)

Gold Standard (2022): Impact Registry, all projects, https://registry.goldstandard.org/projects (accessed August 2022)

JCM Ethiopia Japan (n.d.): Approved methodologies, https://www.jcm.go.jp/et-jp/methodologies/approved (accessed September 2022)

Plan Vivo (n.d.): Markit Registry, https://mer.markit.com/br-reg/public/index.jsp?entity=retirement&sort=account_name&dir=ASC&start=0&acronym=PV&limit=15&additionalCertificationId=&categoryId=100000000000001&name=&standardId=100000000000004&unitClass= (accessed August 2022)

UNEP CCC (2022): CDM pipeline overview, http://www.cdmpipeline.org/ (accessed August 2022)

UNEP CCC (2022b): Article 6 pipeline overview, http://www.cdmpipeline.org/ (accessed August 2022)

Verifavia (n.d.): Which States are participating in CORSIA, https://www.verifavia.com/greenhouse-gas-verification/fq-which-states-are-participating-in-corsia-250.php (accessed September 2022)

VERRA (2022): VERRA all projects, downloaded from https://registry.verra.org/app/search/VCS (accessed August 2022)

6. Key assumptions

- Data referring to the CDM (projects and programmes) has been taken from the UNEP CCC CDM project and PoA pipelines as of August 2022. To remain conservative, we only include registered activities. We did not assess data quality regarding whether a project is still active, as UNEP is the commonly recognized database drawing directly on UNFCCC Secretariat data.
- While there is a high degree of uncertainty regarding the issuance potential of individual activities, these are difficult to assess and will be affected by future political decisions. Only PoAs which have an included component project activity (CPA) in the profiled country have been counted.
- While UNEP CCC captures estimated accumulated emissions until 2025 based on transparently available CDM activity design documents (PDD; PoA-DD, it is clear that meeting these estimations is subject to political decisions and therefore theoretical.
- Any future mitigation potential is expressed in kilotons of carbon dioxide equivalent (ktCO2e = 1000 tCO2e) in order not to prejudge the type of certification that post-2020 mitigation outcomes may be using.
- Voluntary carbon standard data has been taken from the official databases of the respective standards. Verified Carbon Standard data is as of August 2022. Data on Gold Standard (GS) activities have been obtained from the GS registry while Plan Vivo data was obtained directly from the standard in August 2022.
- Parties agreed at COP26 that projects will be able to transition from the Clean Development Mechanism to the new Article 6.4 mechanism. A limited number of Certified Emission Reductions (CERs) could be used towards countries' NDCs, noting that the projects will not be able to receive issuances for post-2020 emission reductions, unless they transition to the new Art.6.4 mechanism. Vintages issuances post-2021 will require corresponding adjustments.

Published By: The Eastern Africa Alliance on Carbon Markets and Climate Finance. The Eastern Africa Alliance on Carbon Markets and Climate Finance is a coalition of seven member states. The Alliance is focused on bringing member states together with a common goal of delivering an understanding of carbon markets and climate finance.

Authors: Stephan Hoch, Peris Waweru (Perspectives Climate Group), Tim Cowman, Tom Owino, Diana Imbugwa (Climate Impact Partners). This country profile has been prepared in the context of the project "Climate Finance Innovators – Linking Carbon Markets with Climate Change in Africa"

This study is part of a project under the International Climate Initiative (IKI). The Federal Ministry for Economic Affairs and Climate Action (BMWK) supports this initiative.

Supported by