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# Digital Tools and Resources for Climate Finance for Agriculture

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## 1. Overview

This document presents a compilation of digital tools and platforms that can be used to support agribusinesses in accessing and managing climate finance, encompassing tools for financial management, data collection, and reporting. Presented below is a non-exhaustive list with quick links to relevant resources.

## 2. Knowledge Products

Resource	Description
<a href="#">Landscape of Climate Finance for Agrifood Systems 2019/20</a>	A first of its kind comprehensive report showcasing the global volume of climate finance in 2019/20 directed towards agrifood systems. Reflecting emerging trends, this report expands the scope of analysis beyond sectoral Agriculture, Forestry and Land Use (AFOLU) to cover the wider concept of 'agrifood systems.'
<a href="#">Landscape of Climate Finance for Agriculture, Forestry, Other Land Uses and Fisheries (AFOLU) 2019/20</a>	This brief report presents the preliminary findings for the Landscape of Climate Finance Agrifood Systems 2019/20, aiming to provide a comprehensive analysis of the global climate finance flowing toward the AFOLU sectors.
<a href="#">Landscape of Climate Finance for Small-Scale Agriculture 2017/18</a>	This report provides a snapshot of the state of climate finance for small-scale agriculture in 2017/2018, highlighting the vulnerabilities of the actors within this space and the climate finance gap present.
<a href="#">Global Landscape of Climate Finance - A Decade of Data</a>	The report summarizes climate finance sources, instruments, uses, and geographies in the past decade, and climate finance needs in the coming years by sectors and geographies. The report includes some key insights on climate finance for AFOLU and outlines its relation to other sectors.
<a href="#">Landscape of Methane Abatement Finance 2019/20</a>	This is a first-of-its-kind report on methane mitigation finance, which aims to assess global investment in methane abatement activities and create a baseline against which investment needs and progress can be measured. Given the significance of AFOLU emissions, especially from agricultural activities (e.g. enteric fermentation, rice cultivation, manure), this is a valuable resource.
<a href="#">Landscape of Climate Finance in Africa</a>	This report provides an overview of the climate finance landscape in Africa in 2019/20. While not focused specifically on agriculture, it helps to put investment numbers into perspective. Data download also available.
<a href="#">Climate Finance Innovation for Africa</a>	This report analyzes barriers to climate investments in Africa for four key mitigation sectors (energy, transport, buildings, and AFOLU) and assesses the potential of various instruments to address each barrier. The framework used in the USAID/ATI report stems from this analysis.
<a href="#">UNFCCC's Toolkit to Enhance Access to Climate Finance</a>	The toolkit summarizes the key dedicated international climate funding opportunities, as well as the associated procedures, policies, and requirements of the various climate funds. There are several sections

	dedicated to climate finance opportunities and tools for agriculture opportunities.
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### 3. Impact measurement tools

Resource	Description	Featured uses
<a href="#">California Air Resources Board (CARB)</a>	CARB introduced the “Rice Cultivation Projects Compliance Offsets Protocol” in 2015, which is the first protocol that measures GHG reductions from crop-based agriculture.	<ul style="list-style-type: none"> <li>Carbon sequestration in rice farming: dry seeding, early drainage, or alternative wetting or drying</li> </ul>
<a href="#">Ex-ACT tool</a>	EX-ACT provides its users a consistent way of estimating and tracking the outcomes of agricultural interventions on GHG emissions. EX-ACT is the only GHG accounting tool to cover the entire agricultural sector including Agriculture, Forestry and Other Land Use (AFOLU,) inland and coastal wetlands, fisheries and aquaculture, agricultural inputs, and infrastructure.	<ul style="list-style-type: none"> <li>Impacts on GHG emissions of the expansion of palm tree plantations</li> <li>Carbon balance appraisal of rice policies</li> <li>Soil conservation projects</li> <li>Low carbon agricultural support</li> <li>Forest protection &amp; reforestation</li> </ul>
<a href="#">Carbon Benefit Project (CBP) Tools</a>	CBP, developed by Colorado State University, provides tools to estimate the impact of agriculture, forestry, and other land use activities on carbon stock changes and greenhouse gas emissions. The tools assist users wanting to estimate GHG impacts of land use and management activities in simple or complex landscapes.	<ul style="list-style-type: none"> <li>Simple assessment for quick estimates of carbon and GHG impacts</li> <li>Detailed assessments of GHG</li> <li>Socio-economic tools assessing effects of GHG balances on humans</li> </ul>
<a href="#">Agriculture and Land Use GHG Inventory (ALU)</a>	The ALU is developed by Colorado State University, funded by US Environmental Protection Agency, USAID, and US Forest Services. The software assists in the creation of GHG inventories by guiding an inventory compiler through the process of estimating greenhouse gas emissions and removals related to agricultural and forestry activities.	<ul style="list-style-type: none"> <li>Regional GHG inventory capacity building</li> </ul>
<a href="#">Climate Change, Agriculture, and Food Security Mitigation Option Tool (CCAFS-MOT)</a>	The CCAFS Mitigation Options Tool estimates greenhouse gas emissions from multiple crop and livestock management practices in different geographic regions, providing policy makers across the globe access to reliable information needed to make science-informed decisions about emission reductions from agriculture.	<ul style="list-style-type: none"> <li>Estimating GHG emissions from different land uses, such as livestock or crop management, to inform policy-decisions</li> </ul>

Resource	Description	Featured uses
<a href="#">VM0007 REDD+ Methodology Framework (REDD+MF)</a>	REDD+MF provides a set of modules for various components of a methodology for reducing emissions from deforestation and forest degradation. The modules, when used together, quantify GHG emission reductions and removals from avoiding unplanned and planned deforestation and forest degradation.	<ul style="list-style-type: none"> <li>• Prevention of degradation of forest lands, forested wetlands, forested peatlands, and tidal wetlands</li> <li>• Forest regeneration</li> </ul>
<a href="#">USAID Carbon Reporting Initiative AFOLU Calculator</a>	<p>Measures the carbon footprint of agriculture, forestry, and other land use practices.</p> <p><i>Note: As of January 2024, this tool is in the process of being updated. Updates will be made available here:</i>  <a href="https://www.climatelinks.org/resources/agriculture-forestry-and-other-land-use-afolu-carbon-calculator">https://www.climatelinks.org/resources/agriculture-forestry-and-other-land-use-afolu-carbon-calculator</a></p>	<ul style="list-style-type: none"> <li>• Forest protection</li> <li>• Forest management, afforestation/reforestation, agroforestry</li> <li>• Cropland management, grazing land management</li> <li>• Forest degradation by fuelwood</li> <li>• Support/development of policies</li> </ul>

#### 4. Climate suitability and risk assessment tools

Resource	Description
<a href="#">ND-GAIN</a>	The Notre Dame Global Adaptation Initiative (ND-GAIN) index measures a country's vulnerability to climate change and its readiness to adapt.
<a href="#">WB Country Climate Risk Profiles</a>	Climate Risk Country Profiles present a high-level assessment of physical climate risks for a country, providing insight for decision makers into the potential for increasing, expanding, and emerging risks across space and time, and for different climate futures.
<a href="#">WB CSA Country Profiles</a>	Climate-Smart Agriculture (CSA) country profiles give an overview of the agricultural challenges in countries around the world, and how CSA can help them adapt to and mitigate climate change.
<a href="#">PIK AGRICA Country Profiles</a>	AGRICA provides comprehensive climate risk analyses for the agricultural sector in selected countries in sub-Saharan Africa. The findings are meant to inform national and sub-national adaptation planning including NDC and NAP development and review processes but will also provide useful information and evidence to decision makers at other planning and implementation levels.
<a href="#">GCA Adaptation Exchange Country Profiles</a>	Provides profiles on adaptation strategies in response to climate challenges in various countries.
<a href="#">WB Think Hazard</a>	Provides an overview of hazards, for a given location, that should be considered in project design and implementation to promote climate

Resource	Description
	resilience. Highlights the likelihood of different natural hazards affecting project areas (very low, low, medium, and high), provides guidance on how to reduce the impact of these hazards, and where to find more information.
<a href="#">The World Bank's Mitigation Action Assessment Tool (MAAP)</a>	The World Bank developed MAAP to measure, compare, and benchmark the relative performance and risks of climate actions. MAAP consists of four independent modules: (1) mitigation action program; (2) management entity; (3) financial structure; and (4) development benefits. Each module consists of a set of key indicators and assessment areas, which reflect what climate experts consider to be as key components of any type of climate action.
<a href="#">GIZ TAAN</a>	The Tool for Assessing Adaptation (TAAN) is an interactive knowledge platform that aims to provide detailed information on the adaptation content of countries' Nationally Determined Contributions (NDCs).
<a href="#">Global Forest Watch</a>	Global Forest Watch (GFW) is an online platform that provides data and tools for monitoring forests. By harnessing cutting-edge technology, GFW allows anyone to access near real-time information about where and how forests are changing around the world.
<a href="#">The SEI Low Emissions Analysis Platform (LEAP)</a>	LEAP, the Low Emissions Analysis Platform, is a widely used software tool for energy policy analysis and climate change mitigation assessment developed at the Stockholm Environment Institute.
<a href="#">Climate Vulnerability Assessment in Agricultural Supply Chain Adaptation Facility</a>	ASCAF is a value chain financing mechanism that would provide finance back-stopped by donor-backed first-loss guarantees and technical assistance to partner agricultural corporations through Multilateral Development Banks. The Climate Vulnerability Assessment focuses on assessing climate vulnerability in agricultural supply chains.
<a href="#">West African Initiative for Climate Smart Agriculture</a>	The West African Initiative for Climate Smart Agriculture is a blended finance fund, investing in advancing climate smart agricultural practices by smallholder farmers in West Africa.

## 5. Taxonomies and frameworks

Taxonomies and frameworks provided in this section can be used to by financial institutions or agribusiness to define climate, track, and monitor climate finance for agriculture.

Resource	Description
<a href="#">IFC Biodiversity Finance Reference Guide</a>	IFC's Biodiversity Finance Reference Guide provides a structured approach for investors and financiers to identify eligible use of proceeds that constitute biodiversity finance. Building on the Green Bond Principles and the Green Loan Principles, the guide provides an indicative list of investment projects, activities, and components that help protect, maintain, or enhance biodiversity and ecosystems, as well as promote sustainable management of natural resources.

Resource	Description
<a href="#">IIASA FABLE pathways</a>	The FABLE pathways present at least one Current Trends Pathway and one Sustainable Pathway to assess how far and how quickly improved policies can make land use and food systems sustainable.
<a href="#">ENCORE</a>	ENCORE sets out how the economy – sectors, sub-sectors, and production processes – depends and impacts on nature. Financial institutions can use data from ENCORE to identify nature-related risks they are exposed to through their lending, underwriting, and investment in high-risk industries and sub-industries.
<a href="#">COP15 Global Biodiversity Framework</a>	A new set of international goals for biodiversity adopted at COP15 by 188 governments who committed to address the ongoing loss of terrestrial and marine biodiversity.
<a href="#">IDB Nature-positive finance tracking and taxonomy</a>	This technical note presents options for defining nature-positive finance based on definitions and principles identified in a bibliographical review drawing on global expertise and developing frameworks and taxonomies. Acknowledging the variety of institutional and ecological contexts in which MDBs operate, the report offers a menu of options to screen nature-positive activities as well as a variety of approaches to determine the nature-positive contribution to investments. Finally, the report proposes principles for tracking and reporting on these investments.
<a href="#">World Bank Enabling the Business of Agriculture country rankings</a>	Provides a table showing each country’s region, income group, and Doing Business in Agriculture rank and overall score for the 101 countries assessed.
<a href="#">Earth Map</a>	Earth Map is an innovative, free open-source tool created to support countries, research institutes, farmers, and members of the general public with internet access to monitor their land in an easy, integrated, and multi-temporal manner. It allows everyone to visualize, process, and analyze satellite imagery and global datasets on climate, vegetation, fires, biodiversity, geo-social, and other topics.
<a href="#">TNFD framework</a>	The Taskforce on Nature-Related Financial Disclosures (TNFD) has developed a set of disclosure recommendations and guidance for organizations to report and act on evolving nature-related dependencies, impacts, risks, and opportunities.

## 6. Climate-specific finance initiatives for agriculture

Resource	Description
<a href="#">Africa Agriculture and Trade Investment Fund (AATIF)</a>	Provides direct financing to agribusinesses in SSA with the aim to increase food security, improve livelihoods, and strengthen agribusinesses.
<a href="#">CLIC Agrifood Investment Connector</a>	The ClimateShot Investor Coalition (CLIC) is an action-oriented group of impact investment leaders working in agriculture and food systems. The Connector is a component of CLIC that aims to develop a high-quality climate and nature-positive pipeline of agribusinesses in developing economies. The Connector identifies suitable SMEs and works with them to assess their climate and nature risks and impacts in preparation for investor pitching and due diligence. In parallel, the Connector identifies pools of interested investors and builds a solid understanding of their requirements to facilitate meaningful connections with

Resource	Description
	SMEs. Most recently, the Connector partnered with AGRA, leveraging their pipeline of SMEs to identify climate and nature-positive agribusinesses, quantify their impact, and help in preparation for pitching to investors at the Africa Food Systems Forum in September 2023.
<a href="#">Cooling-as-a-Service (CaaS) Initiative</a>	Innovative business models consisting in servitization of cooling services, like cooling-as-a-service (CaaS) and ‘Your Virtual Cold Chain Assistant’ can give smallholders cold storage access without upfront costs, and offer user-friendly information, informing their produce and farm management (The Lab, 2021). Leveraging these models can help reduce GHG emissions and increase the climate resilience of small-scale agrifood actors through improved incomes and food security.
<a href="#">Aceli Africa</a>	Provides lenders with financial incentives to encourage lending to underserved agribusiness SMEs and borrowers with increased risk profiles.
<a href="#">FSD Africa’s Nigeria Green Bond Programme</a>	Supports green bonds by providing technical support and capacity building training to issuers and by engaging with regulators to encourage the creation of an enabling environment for green bond issuance.
<a href="#">Northern Rangelands Trust (NRT)</a>	Focuses on community-based conservation and sustainable natural resource management in the Northern Rangelands of Kenya.
<a href="#">Boomitra</a>	Platform focused on soil monitoring, carbon sequestration, and climate finance to support farmers and ranchers in adopting sustainable agricultural practices.
<a href="#">Cargill</a>	Made a commitment to reduce supply chain emissions by 30% by 2030. Cargill intends to achieve this goal by accelerating sustainable progress in beef, advancing soil health, reducing carbon in shipping, and protecting forests in partnership with farmers.
<a href="#">Indigo Ag</a>	Indigo Ag, an agricultural technology company, intends to remove one trillion tons of carbon dioxide from the atmosphere across 12 billion acres.
<a href="#">ThriveAgric</a>	A technology-driven company based in Nigeria that aims to address challenges in the agricultural sector through aggregation.
<a href="#">The Smallholder Forestry Vehicle</a>	An instrument under the Global Innovation Lab, this strategy aggregates multiple small-scale forestry projects into one investment vehicle.
<a href="#">Pula</a>	An innovative business that bundles insurance with inputs (such as seeds and fertilizer) and farmer advisory services.
<a href="#">Blockchain Climate Risk Crop Insurance</a>	A digital platform for standardized crop insurance for smallholder farmers in Africa, which increases their resilience to climate change by enabling transparent, timely, and fair payouts in extreme weather events.
<a href="#">Apollo Agriculture</a>	An innovative agritech company operating in Kenya and Zambia that provides farmers with a range of financial and operational services that are accessible via a mobile application.
<a href="#">CoAmana</a>	A Nigerian-based technology company with a focus on strengthening market linkages across farming communities in sub-Saharan Africa.
<a href="#">Winich Farms</a>	A Nigerian-based digital platform that connects more than 80,000 smallholder farmers with off-takers, facilitating the efficient trade of staple crops.
<a href="#">Acorn/Rabobank</a>	Supports farmers with financial and technical support to start carbon projects and issues carbon credits, connect farmers with buyers to sell the carbon credits they generate through the bank’s platform.
<a href="#">The Rwanda Green Fund (FONERWA)</a>	A climate change investment fund established by the Government of Rwanda in 2012 to support projects and ventures with significant environmental benefits and to attract climate financing in Rwanda, promoting sustainable development.
<a href="#">The Africa Carbon Markets Initiative (ACMI)</a>	Aims to support stakeholders along the carbon market supply chain, including working with and supporting governments on how to scale both the supply and demand of high integrity carbon credits in Africa, prioritizing high integrity



Resource	Description
	climate impact, clean energy, and sustainable development. Sections 6-8 of the ACMI roadmap present some insight into the technical and policy steps for climate finance and agriculture in Africa.
<a href="#">Consultative Group on International Agriculture (CGIAR)</a>	Generates valuable knowledge in agriculture through innovative research to address food security, rural poverty, and environmental challenges.
<a href="#">UNDP's High-Integrity Carbon Markets Initiative</a>	This initiative seeks to establish robust principles and guidelines that ensure high integrity across all types of carbon markets, with a vision to make carbon markets work for host countries and their NDCs. In addition, it seeks to ensure that all parties are equally informed and able to strategically engage; that fairer terms, conditions and prices are negotiated with buyers; and importantly, that benefit sharing, SDG impacts and social and environmental safeguards are at the core of carbon program design and implementation.

## 7. Key funders for sustainable agriculture in Sub-Saharan Africa

Resource	Category of investor	Description
<a href="#">Agence Francaise de Developpement (AFD)</a>	Bilateral Development Finance Institution (DFI)	The AFD Group funds, supports, and accelerates the transitions to a fairer and more sustainable world. Focusing on climate, biodiversity, peace, education, urban development, health and governance, teams carry out more than 4,200 projects in France's overseas departments and territories and in another 150 countries.
<a href="#">Bill &amp; Melinda Gates Foundation</a>	Philanthropic foundation	The Bill & Melinda Gates Foundation works to help all people lead healthy, productive lives. In developing countries, it focuses on improving people's health and giving them the chance to lift themselves out of hunger and extreme poverty.
<a href="#">IKEA Foundation</a>	Philanthropic foundation	The IKEA Foundation is a strategic philanthropy that focuses its grant making efforts on tackling poverty and climate change.
<a href="#">Adaptation Fund</a>	Multilateral Climate Fund	The Adaptation Fund finances projects and programs that help vulnerable communities in developing countries adapt to climate change. Initiatives are based on country needs, views, and priorities.
<a href="#">Clean Technology Fund</a>	Multilateral Climate Fund	CTF enables clean energy transformation in developing countries. It provides resources to scale low-carbon technologies with significant potential for long-term greenhouse gas emissions savings. The fund supports a wide array of clean technologies across different areas, including renewable energy, energy efficiency (of buildings, agriculture, and industry), and clean transport.
<a href="#">Global Climate Change Alliance</a>	Multilateral Climate Fund	GCCA+ is a European Union flagship initiative helping the world's most vulnerable countries address climate change.
<a href="#">Global Environment Facility - Trust Fund</a>	Multilateral Climate Fund	GEF is a family of funds dedicated to confronting biodiversity loss, climate change, pollution, and strains on land and ocean health. Its grants, blended financing, and policy support help developing countries address their biggest environmental priorities and adhere to international environmental conventions.
<a href="#">Green Climate Fund</a>	Multilateral Climate Fund	GCF is the world's largest climate fund and aims to accelerate transformative climate action in developing countries through a country-owned partnership approach and use of flexible financing solutions and climate investment expertise.

Resource	Category of investor	Description
<a href="#">Least Developed Countries Fund</a>	Multilateral Climate Fund	LDCF is a fund established in 2001 under the UNFCCC to provide funding to the least developed countries to help them adapt to climate change.
<a href="#">African Development Bank</a>	Multilateral DFI	The overarching objective of the AfDB Group is to spur sustainable economic development and social progress in its regional member countries (RMCs), thus contributing to poverty reduction. AfDB achieves this through mobilizing and allocating resources for investment in RMCs; and providing policy advice and technical assistance to support development efforts.
<a href="#">International Development Association</a>	Multilateral DFI	IDA is a part of the World Bank that helps the world's poorest countries with loans and grants.
<a href="#">International Fund for Agricultural Development</a>	Multilateral DFI	IFAD invests in rural people, empowering them to increase their food security, improve the nutrition of their families, and increase their incomes.
<a href="#">World Bank Group</a>	Multilateral DFI	The World Bank Group is one of the world's largest sources of funding and knowledge for developing countries. Its five institutions share a commitment to reducing poverty, increasing shared prosperity, and promoting sustainable development.
<a href="#">European Development Fund</a>	Public Fund	Provides funding to public and private bodies in all EU regions to reduce economic, social, and territorial disparities; supports investments through dedicated national or regional programs.