



Restoration Challenge Grant Platform for Smallholders and Communities, with Blockchain-Enabled Crowdfunding

Part I: Project Information

GEF ID

10637

Project Type

MSP

Type of Trust Fund

GET

CBIT/NGI

CBIT

NGI

Project Title

Restoration Challenge Grant Platform for Smallholders and Communities, with Blockchain-Enabled Crowdfunding

Countries

Regional, Cameroon, Kenya

Agency(ies)

IUCN

Other Executing Partner(s)

Biodiversity International

Executing Partner Type

CSO

GEF Focal Area

Land Degradation

Taxonomy

Focal Areas, Forest, Forest and Landscape Restoration, Land Degradation, Sustainable Land Management, Restoration and Rehabilitation of Degraded Lands, Influencing models, Deploy innovative financial instruments, Demonstrate innovative approaches, Stakeholders, Civil Society, Community Based Organization, Type of Engagement, Participation, Communications, Awareness Raising, Education, Gender Equality, Gender results areas, Participation and leadership, Access to benefits and services, Gender Mainstreaming,

Sex-disaggregated indicators, Capacity, Knowledge and Research, Knowledge Generation, Training, Innovation, Knowledge Exchange, South-South, Learning, Theory of change, Capacity Development

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 1

Climate Change Adaptation

Climate Change Adaptation 1

Duration

36 In Months

Agency Fee(\$)

180,000.00

Submission Date

7/8/2020

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
LD-1-3	GET	2,000,000.00	850,000.00
Total Project Cost (\$)		2,000,000.00	850,000.00

B. Indicative Project description summary

Project Objective

To facilitate, support, and mobilize investment in, smallholder and community-led restoration of critical landscapes to provide global environmental benefits and enhanced resilient economic development and livelihoods, in support of the Bonn Challenge, AFR100, the Trillion Tree Campaign, and other global and national restoration efforts.

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
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Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 1: Smallholder - and Community-led Restoration	Investment	1) Increased implementation of forest and landscape restoration by local community actors, with benefits for land, water, climate, biodiversity, and people	<p>1.1) Platform mobile app supporting Platform through verification and payments transfer ? 180,000 verification and payment transactions covering planting of 500,000 trees and 1.3M instances of tree care/maintenance work to <i>Restoration partners*</i></p> <p>1.2) Network of Platform-provided phones hosting Platform mobile app supporting <i>Restoration partners</i> and <i>Community entrepreneurs</i> ? 300 mobile phones with mobile app provided to <i>Community entrepreneurs</i> and/or <i>Restoration partners</i> & tech support provided</p> <p>1.3) 400,000 trees planted and maintained as a result of Platform support and cofinancing leveraged</p> <p>1.4) At least 4,000 direct beneficiaries of Platform restoration grants, male & female</p> <p>1.5) At least 5,000 ha of land under restoration; At least 5,000 ha of land under improved practices</p> <p>1.6) At least 3 TRI landscapes in 2 different countries supported by Platform-supported restoration</p>	GET	1,187,500.00	250,000.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 2: Awareness Raising and Capacity Building for Smallholders, Communities, Community Entrepreneurs, and Seedling Supply Chain Actors	Technical Assistance	2) Strengthened awareness of restoration opportunities and best practices among smallholders and rural communities; strengthened capacity for restoration among smallholders, communities and supply chain actors in target landscapes	<p>2.1) At least 1,000 Restoration partners and 25 Community entrepreneurs registered with Platform following awareness-raising campaign in target landscapes</p> <p>2.2) At least 1,000 Restoration partners and 25 Community entrepreneurs trained on use of Platform mobile app, use of Platform-provided phones, and restoration practices</p> <p>2.3) At least 1 tree nursery(s) in each target landscape established and/or strengthened and providing seedlings of suitable species and genetic stock to meet local demand, with point-of-transaction training on planting and care</p>	GET	345,000.00	300,000.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 3: Knowledge Capture and Dissemination	Technical Assistance	3) Improved knowledge of best practices for engaging, supporting, and incentivizing restoration by smallholders and rural communities	<p>3.1) 1 case study per targeted landscape on Platform-supported work and 1 Consolidated Report on Platform experiences with recommendations, including on Phase II scale up, developed and disseminated through relevant knowledge platforms</p> <p>3.2) 1 presentation at GLF or similar global forum on Platform experiences & recommendations; 1 high-level roundtable with government and private-sector partners in each country where Platform is engaged</p> <p>3.3) Collaboration/coordination with other platforms that promote the restoration agenda</p>	GET	110,000.00	100,000.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 4: Phase II Scale Up and Financial Sustainability	Technical Assistance	4) Strengthened capacity and instruments for scaled-up investment in smallholder- and community-led restoration	<p>4.1) 1 public web platform with blockchain-supported technology to attract, enable, and verify crowd-funding investment in Platform-supported smallholder- and community-led restoration</p> <p>4.2) Awareness-raising campaign on crowd-funding opportunities for Platform-supported smallholder- and community-led restoration, and potential partnership with aligned platforms</p> <p>4.3) \$250,000 USD of crowd-sourced investment in Platform-supported restoration transacted</p>	GET	175,682.00	100,000.00
Sub Total (\$)					1,818,182.00	750,000.00
Project Management Cost (PMC)						
			GET	181,818.00	100,000.00	
			Sub Total(\$)	181,818.00	100,000.00	
			Total Project Cost(\$)	2,000,000.00	850,000.00	

C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
GEF Agency	IUCN	Grant	Recurrent expenditures	100,000.00
GEF Agency	IUCN	In-kind	Recurrent expenditures	200,000.00
Others	Bioversity International	Grant	Recurrent expenditures	150,000.00
Others	Bioversity International	In-kind	Recurrent expenditures	150,000.00
Others	Crowdsourced investors	Grant	Investment mobilized	250,000.00
Total Project Cost(\$)				850,000.00

Describe how any "Investment Mobilized" was identified

Under Output 4.1., in Year 2, a public web platform and underlying software system will be developed to facilitate secure and transparent crowd-funding of Platform-supported smallholder- and community-led restoration. Alongside information presented on the public web platform developed under Output 4.1, an awareness-raising campaign utilizing a variety of outreach and communication means, will be implemented to build awareness of the Platform's crowd-sourced restoration investment opportunities. With work to develop the web-portal and awareness-raising campaign beginning in Year 2, it is anticipated that 20 months of operating the web-portal investment window, including through potential partnership with other aligned initiatives identified under Output 3.3, would yield \$250,000 USD in crowd-sourced investment.

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
IUCN	GET	Global	Land Degradation	LD Global/Regional Set-Aside	2,000,000	180,000	2,180,000.00
Total GEF Resources(\$)					2,000,000.00	180,000.00	2,180,000.00

E. Project Preparation Grant (PPG)

PPG Required

PPG Amount (\$)

50,000

PPG Agency Fee (\$)

4,500

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
IUCN	GET	Global	Land Degradation	LD Global/Regional Set-Aside	50,000	4,500	54,500.00
Total Project Costs(\$)					50,000.00	4,500.00	54,500.00

Core Indicators

Indicator 3 Area of land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
5000.00	0.00	0.00	0.00

Indicator 3.1 Area of degraded agricultural land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 3.2 Area of Forest and Forest Land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
5,000.00			

Indicator 3.3 Area of natural grass and shrublands restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 3.4 Area of wetlands (incl. estuaries, mangroves) restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
5000.00	0.00	0.00	0.00

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
5,000.00			

Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Documents (Please upload document(s) that justifies the HCVF)

Title	Submitted

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	395749	0	0	0
Expected metric tons of CO ₂ e (indirect)	0	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	395,749			
Expected metric tons of CO ₂ e (indirect)				

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Anticipated start year of accounting	2021			
Duration of accounting	20			

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)				
Expected metric tons of CO ₂ e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	2,000			
Male	2,000			
Total	4000	0	0	0

Part II. Project Justification

1a. Project Description

Project Summary

The *Restoration Challenge Grant Platform for Smallholders and Communities, with Blockchain-Enabled Crowdfunding* (hereafter referred to as the Platform), will facilitate and support enhanced smallholder and rural community member engagement and investment in restoration. The Platform will utilize mobile cellular technology and payment transfer services to provide small grants/payments for smallholder-, community-, and school-led restoration work ? principally tree-planting ? matched by co-investment (in-kind and/or cash). Cellular technology will allow for efficient and effective verification of work and transfer of payments. Another key innovative focus of the Platform will be the integration of blockchain technology throughout the restoration value chain to provide transparency, build trust, facilitate real-time monitoring, evaluation and verification, and support mobilization of funding for restoration. From appropriate species selection, seed sourcing and seedling propagation, to tree planting and maintenance and transfer of payments, each transaction will be marked by a unique, traceable, unchangeable and verifiable blockchain. A second phase of the Platform will utilize a public-facing web platform and partnerships with other tree planting and restoration investment matching platforms to facilitate crowdfunding of Platform-supported restoration and financial sustainability, drawing upon the blockchain technology and ledger for security and transparency and trustworthiness of crowd-funded transactions. A range of engagement approaches and selection of a diverse group of landscapes will allow for cross comparison and learning to inform restoration initiatives going forward.

The Platform will initially be linked to The Restoration Initiative (TRI) GEF-6 programme to allow for use of TRI infrastructure and networks for communications and knowledge sharing, capacity building, and enhanced outcomes at reduced cost. Platform activities will be piloted in two partnering TRI countries, Cameroon and Kenya, whose selection was informed by a number of factors including: (1) Bonn Challenge commitments and strong alignment of national objectives on restoration, rural development and poverty alleviation, climate mitigation and adaptation, and other restoration co-benefits with Platform objectives; (2) diversity of landscapes and contexts afforded by East and West African experiences; (3) existing IUCN and Bioversity International programs of work, offices and infrastructure in both Cameroon and Kenya; (4) local Kenyan technology expertise to potentially support the mobile application, blockchain software and tech support components; (5) availability of Restoration Opportunity Assessment Methodology (ROAM)^[1] assessments at national and sub-national scales, identifying priority restoration opportunities and interventions; (6) availability of Species Threat Abatement and Recovery (STAR) assessments, including detailed, high-resolution geospatial analyses of landscapes and degradation and showing high priority areas and other information important for conservation of threatened species; and (7) size of the Project budget allowing for participation of 2

pilot countries. Additional countries and landscapes may be added at a subsequent date pending the success of the Platform, including work to mobilize crowdfunding of Platform-supported restoration.

Upon successful development and implementation of the Platform including blockchain-enabled crowdfunding, the Platform will function as a freestanding initiative ? one that can inform and link with other global and regional initiatives and platforms supporting the restoration agenda, including the Trillion Trees Initiative, UN Decade on Ecosystem Restoration, and others.

a) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed

Some three quarters of all degraded land suitable for restoration ? one and a half billion hectares ? is found in areas under moderate human pressure, populated largely by a mix of smallholder farmers, herders, and rural communities, particularly in Africa and Asia^[2]². These land users are directly impacted by land degradation, and their contributions to restoring degraded lands are essential if we are to achieve restoration at the scale needed to address global challenges including food and water security, climate change, biodiversity conservation, jobs creation and more.

While the need to partner with, incentivize, and support smallholders and rural communities to restore degraded lands would appear self evident, given their direct dependence upon land resources and proximity to restoration opportunities, reaching and partnering with smallholders and rural community members is challenging. Many are situated far from major commercial and population centers where a lack of suitable infrastructure, both physical and technological, together with knowledge, market, finance, and other constraints, conspire to make the costs of transacting high. Due in part to these challenges, programs and initiatives directly targeting and incentivizing smallholder and community participation in restoration are to date limited in both number and scale.

Several multilateral institutions and social entrepreneurs have been engaging with smallholders and rural communities through various means, and their experiences can help inform similar efforts on restoration. The Global Environment Facility (GEF) initiated a Small Grants Programme in 1992 with the aim of financing community-led initiatives to address global environmental and sustainable development issues. The Forest and Farm Facility^[3]³, a partnership of FAO, IIED, IUCN, and Agricorn, works to provide direct financial support and technical assistance to strengthen forest and farm producer organizations representing smallholders and communities. IUCN, together with the GEF and World Bank, has since 2010 implemented the Save our Species Program, that channels grants to individuals, communities, and organizations for projects addressing species loss^[4]⁴. And the for-profit organization Plastic Bank has, since 2013, operated a rapidly growing platform to incentivize individuals living in poor and rural communities to collect and recycle plastic waste using mobile and

blockchain technologies^[5]⁵. Among other positive outcomes, these initiatives demonstrate the importance of local ownership and involvement in the success and sustainability of initiatives that seek to improve the livelihoods of rural communities.

The need to extend and scale up this engagement and investment in smallholders and rural communities to the global project of restoring degraded and deforested lands is both pressing and largely untapped. If provided with access to finance, tools, and knowledge, the opportunities for smallholders and rural communities to invest in restoration are substantial: from investing in sustainable woodlots and on-farm trees, to agroforestry and enhanced soil and water management, to restoration-linked businesses such as tree and seed supply centers, fertilizer provision, value-added processing, and more. Moreover, new technology, including mobile phone applications, blockchain technology to facilitate secure transactions between parties that do not know or trust each other and/or are separated by great distances, and the emergence of low-cost money transfer providers, offer new means for addressing many of the challenges that have thus far limited scaled up engagement and investment in smallholder- and rural community-led restoration.

A number of recent studies illustrate the magnitude and extent of the challenge. One quarter of the world's land area and some two-thirds of all lands in Africa are either highly degraded or undergoing high rates of degradation^[6]⁶,^[7]⁷. This degradation undermines the well being of 3.2 billion people, costing more than 10 percent of annual global gross product in lost species and ecosystem services^[8]⁸. Looking forward, climate change is expected to intensify stresses on land resources, with a further 10 percent projected reductions in crop yields globally and up to 50 percent in certain regions by 2050^[9]⁹.

As widespread and significant is degradation, so too are opportunities for restoration. An assessment by the Global Partnership on Forest and Landscape Restoration (GPFLR) identifies 2 billion hectares of deforested and degraded landscapes worldwide – an area larger than South America – where opportunities for forest landscape restoration may be found^[10]¹⁰. Another study published in 2019 in the journal *Science* examining the global potential for reforestation alone finds the planet can support nearly 1 billion hectares of additional trees – an area roughly the size of the US – without encroaching upon cities or agricultural land, and that doing so would ultimately capture two thirds of all human-made carbon emissions since the Industrial Revolution.^[11]¹¹ Moreover, numerous studies show that wide-scale implementation of restoration would generate significant net benefits. For example, a study looking across Africa finds that the benefits of taking action against land degradation, including restoration, are nearly 7 times the cost of inaction.^[12]¹²

Ongoing and planned restoration initiatives, including the GEF-6 Restoration Initiative (TRI), presently in Year 2 of a five-year programme of work in ten African and Asian countries, offer opportunities for partnership and piloting of initiatives aimed at incentivizing smallholder- and rural community-led restoration. In addition, the growing political will and demand for restoration, evidenced by, among other developments, the UN General Assembly declaration that 2021-2030 be the *UN Decade on Ecosystem Restoration*, commitments to the Bonn *Challenge* goal of bringing 350 million hectares of degraded lands into restoration by 2030^[13]¹³, and the recently launched *Trillion Tree Campaign*^[14]¹⁴, speak to the potential for scaled up investment in smallholder- and rural community-led restoration, if existing barriers can be overcome.

The Millenium Ecosystem Assessment identified four principle underlying factors affecting land degradation at the global level: land tenure security, rule of law, population density, and access to markets^[15]¹⁵. In particular, improving access to markets has been found to lead to wider adoption of sustainable land management practices in many case studies^[16]¹⁶. This project is focused on improving and expanding access to the restoration marketplace ? both for restoration investors and for the rural communities and smallholders living in areas where restoration needs and opportunities are great. If successful, the approach and underlying technology will help shift the incentives governing land use towards restoration, with potentially far reaching and positive impacts that can be replicated, scaled up, and incorporated into other restoration initiatives.

b) the baseline scenario and any associated baseline projects

Key baseline global and regional restoration initiatives and programs of relevance to the Platform include the following:

? The *Bonn Challenge*, launched in 2011 by the Government of Germany and IUCN as a global call for restoration of 150 million hectares of deforested and degraded lands by 2020 and 350 million hectares by 2030. To date, 62 commitments by governments and other partners totaling 172 million hectares have been made^[17]¹⁷.

? The *UN Decade on Ecosystem Restoration* (2021-2030), launched by the UN General Assembly and led by UN Environment and FAO, seeks to accelerate progress on global restoration goals including the Bonn Challenge and regional initiatives, catalyzing political support for restoration and providing a coalition of partners offering scientific and financial support.

? The *Trillion Tree Initiative*, launched at the 2020 World Economic Forum in Davos as a platform for governments, businesses and civil society to provide support to the UN Decade on Ecosystem Restoration. The US has committed to supporting the initiative, and the not-for-profit Plant-for-the-Planet foundation, based in Munich, Germany, is supporting the initiative including through a website

that reports to track trees planted by partners, allows users to register planted trees, and provides links to some 80+ tree planting organizations to which users can make donations.^[18]¹⁸ The Platform will explore partnership with the Trillion Tree Initiative, that can include communications and awareness-raising, becoming listed as a partner tree planting organization, as well as sharing best practices, experiences, and technology.

? *TerraMatch*^[19]¹⁹, recently launched (June 2020) by the World Resources Institute, is a digital platform that seeks to connect and match tree-growing project developers with suitable and interested funders. TerraMatch is presently available in beta form. The Platform will explore knowledge sharing, awareness raising, and crowdfunding opportunities with TerraMatch under Components 3 and 4 of the project.

? The *Priceless Planet Coalition*^[20]²⁰ is a recently launched initiative of Mastercard, that seeks to plant 100 million trees over five years through a number of card member-supported options, and with the help of Conservation International and the World Resources Institute. The Platform will explore knowledge sharing, awareness raising, and crowdfunding opportunities with TerraMatch under Components 3 and 4 of the project.

? *Ecosia* ? Ecosia is an internet search engine launched in 2009, with offices in Berlin, Germany. The organization donates 80% or more of its profits to nonprofit organizations that focus on reforestation. As of July 2020, the organization claims to have supported the planting of more than 100 million trees. Bioversity International is presently discussing potential partnership with Ecosia, including linking to this proposal's work and investment opportunities.

? Crowdfunding platforms - A growing number of crowdfunding platforms are in operation, and they differ with respect to the type of projects they promote (e.g., education, personal crowdfunding, nonprofit ventures, creative projects, and more), the types of fees these platforms charge to facilitate transactions, the tools they offer to help promote projects, level of customer support, and more^[21]²¹. Of these, Kickstarter is the largest in terms of funds mobilized, but other popular platforms include Indiegogo, PledgeMusic, GoFundMe, and many others^[22]²².

? *AFR100, The Africa Forest Landscape Restoration Initiative*, is a country-led effort to bring 100 million hectares of land in Africa into restoration by 2030. AFR100 contributes to the Bonn Challenge, the Africa Resilient Landscapes Initiative, the African Union Agenda 2063, and other targets. Both Cameroon and Kenya have made AFR100 commitments, and the effort to date has surpassed its target for commitments by 125%.^[23]²³

? *The Global Partnership on forest and Landscape Restoration (GPFRL)* is a global network of governments, organizations, academic and research institutes, communities and individuals launched in 2003, and which works to catalyze voluntary action on restoration. It does this through awareness raising, knowledge sharing, capacity development, and other engagement.

? *Collaborative Partnership on Forests (CPF)* ? an inter agency partnership of 15 international organizations and secretariats with programmes on forests including IUCN, FAO, and UNEP. The CPF is presently implementing a joint programme of action on restoration, with support from the GEF^[24]²⁴.

Relevant tools and platforms that will be drawn upon by the Platform include:

? *SeedIT* tool - SeedIT is a free mobile and desktop application developed by Bioversity International to enable easy and verifiable recording and identification of data on tree seed sources and seedlings. SeedIT allows users to collect and map the information of individual trees used for seed collection or planting. Different user interfaces enable the platform to serve the needs of differing groups of users, from nurseries to national forestry department and local seed centers, to smallholders, to identify which tree sources are most suitable for a given site, and which nurseries have stocks of suitable seeds and seedlings. The application is presently being piloted to map seed collections of high value tree species seed sources in Laos.

? *Diversity for Restoration (D4R)* tool ? developed by Bioversity International, D4R helps in identifying appropriate species and seed sources for project sites to support achievement of desired restoration objectives. The tool includes consideration of anticipated climate change impacts and includes information on the propagation of more than 300 tree species.^[25]²⁵

? *Species Threat Abatement and Recovery (STAR) metric*^[26]²⁶ ? developed by IUCN with support from Newcastle University, Birdlife International, and others, provides a quantitative measure of benefits to biodiversity from alternative restoration and conservation actions. STAR assessments are being piloted in 4 TRI countries including in Cameroon and Kenya (both projects). Assessment work will be integrated into the selection of target landscapes and selection of appropriate tree species.

? *Plastic Bank* ? a for-profit organization established in 2013 that operate a rapidly growing platform to incentivize individuals living in poor and rural communities to collect and recycle plastic waste using mobile and blockchain technologies. Experiences from use of Plastic Bank's mobile platform and approach have informed the development of the Platform (see Box 1 below), and the co-founder of Plastic Bank has offered to advise on the development of the Platform going forward.

? *Sustainifi*^[27]²⁷ ? this UK-based organization has developed a software platform to facilitate sustainable land management including mapping and verification of land-based management applications using satellite-based imagery. Preliminary conversations with Sustainifi indicate that their proprietary platform can potentially be tailored to meet the needs of the Platform at reduced cost and risk (TBD in PPG stage).

? *M-Pesa* and other low-cost funds transfer providers ? M-Pesa is a mobile phone-based money transfer service launched in 2007 by Vodafone Group plc and Safaricom, that provides a low cost means for transferring funds that does not require users to have a bank account. It is presently the most successful mobile-phone based financial service in the developing world, although it is by no means the only provider. According to M-Pesa, over 41.5 million people access the service regularly^[28]²⁸,

recording some 12 billion transactions in 2019 alone. Along with Kenya, the service is now available in Tanzania, Mozambique, DRC Lesotho, Ghana, Egypt, Afghanistan and South Africa. Other low-cost funds transfer service providers that are, or are becoming established across Africa and other parts of the developing world include Orange, MTN, and Camtel network providers in Cameroon. Globally, Sub-Saharan Africa is the fastest-growing mobile market in the world, and the market for mobile funds transfer providers is expected to continue to grow in number and size^[29].

In Cameroon, relevant ongoing projects and initiatives include the following:

? In February 2017, the government of Cameroon pledged to restore 12.06 million ha of deforested and degraded lands as a contribution to the Bonn Challenge and AFR 100 restoration initiatives. Since then, the government has provided funding on an annual basis for local Councils to support tree planting and other restoration work^[30], and a National Forest Land Restoration Strategy is anticipated for 2020^[31].

? The Restoration Initiative (TRI) child project, *Supporting Landscapes Restoration and Sustainable Use of Local Plant Species and Tree Products (Bambusa ssp, Irvingia spp, etc) for Biodiversity Conservation, Sustainable Livelihoods and Emissions Reduction in Cameroon*, implemented by IUCN and executed by the International Network for Bamboo and Rattan (INBAR). The project is working to support implementation and scaling up of FLR in Cameroon, with an innovative focus on piloting and assessing the role that bamboo can play in this effort. Project sites are located in the northern Waza district, and also at two southern sites: the Mbalmayo landscape near the capitol of Yaounde, and the Douala-Edea Landscape on the coast near Douala (see Annex A). The Platform will enhance and expand these efforts by engaging with smallholders and rural communities in target landscapes where appropriate, and by utilizing TRI Programme and TRI Cameroon infrastructure for communications, engagement, capacity building, and enhanced outcomes at reduced cost. Landscapes and partnership arrangements will be further developed in the PPG stage.

? The GEF-6 project, *Removing barriers to biodiversity conservation, land restoration and sustainable forest management through community-based landscape management*, implemented by UNEP and executed by the Ministry of Environment, Nature Protection and Sustainable Development of Cameroon with support of Rainforest Alliance. The project is supporting participatory community-based natural resource management and local enterprise development in the Western Highlands and Southern regions of Cameroon, with some overlap with the GEF TRI Cameroon child project. Opportunities for partnership and capture of synergies in the implementation of the Platform will be assessed during the PPG stage.

? The GEF-7 project, *Integrated management of Cameroon's forest landscapes in the Congo Basin*, child project of the SFM Impact Programme on Dryland Sustainable Landscapes, implemented by WWF-US and executed by the Cameroon Ministry of Environment and Nature Protection. The project is presently under development but may offer opportunities for partnership and capture of synergies (TBD in PPG stage). The project targets the largely intact southern trans-frontier forest belt stretching from the Rio Campo seascape on the coast, across the Cameroon segments of the Tri-National Dja-Odzala-Minkebe and Sangha Tri-National landscapes towards the east, where forests are being

degraded by unsustainable logging and conversion of forest land for agricultural purposes, artisanal and industrial mining and new infrastructure development.

? Cameroon does not presently have a national network of tree seed centers, however the National Forestry Development Agency (ANAFOR) is supporting a national program to develop forest plantations, and through this work is supporting some 40 tree nurseries located across the country. These nurseries predominantly propagate exotic species (e.g. *Eucalyptus camadulensis*, *Casuarina equisetifolia*, *Pinus kesyia*, *Cupresus lusitanica*). A very limited number of native species are also produced in these nurseries to supply local needs, mostly for enrichment plantings in the degraded state forest reserves managed by the Agency. ^[32]³²

In Kenya, relevant ongoing projects and initiatives include the following:

? In September 2016, the government of Kenya pledged to restore 5.1 million ha of deforested and degraded lands as a contribution to the Bonn Challenge and AFR 100 restoration initiatives. In addition, the country's constitution mandates the maintenance of at least 10% tree cover across the country^[33]³³. A number of national initiatives and work programs are supporting these objectives.

? Kenya has a national tree seed center managed by the Kenyan Forestry Research Institute (KEFRI), that undertakes research in tree improvement, conservation of forest genetic resources, integration of high value trees on farms, and production of high-quality tree germoplasm. The Institute is operating in 6 ecoregions of Kenya and is providing training, advisory and consultancy services in tree seed, tree nursery management, and tree establishment, management and marketing. Information on tree species recommendations per ecozone is available for nearly 60 species (more than half native species) used in reforestation and restoration in the country. However, the production potential of KEFRI is low and presently unable to meet demand. Some private seed suppliers are also operating in the country for a small number of commercial species, as well as NGOs.^[34]³⁴

? Two child projects of The Restoration Initiative (TRI):

- o *Enhancing integrated natural resource management to arrest and reverse current trends in biodiversity loss and land degradation for increased ecosystem services in the Tana Delta, Kenya* (TRI Kenya Tana Delta), implemented by UNEP and executed by Nature Kenya. This project is working to restore degraded landscapes in the Tana Delta, with a target of 10,000 ha under restoration and 95,000 ha indigenous community conservation areas managed to benefit globally-important biodiversity. The Platform will enhance and expand these efforts by engaging with smallholders and rural communities in the targeted landscape as appropriate, and by utilizing TRI Programme and TRI Kenya Tana Delta infrastructure for communications, engagement, capacity building, and enhanced outcomes at reduced cost. Landscapes and partnership arrangements will be further developed in the PPG stage.

- o *Restoration of arid and semi-arid lands of Kenya through bio-enterprise development and other incentives under TRI* (TRI Kenya ASAL), implemented by FAO and executed by KEFRI. This project is working to restore degraded lands in the north near Mt. Kulal and in the central part of Kenya near the Mukogodo forest, supporting the development of diversified livelihood options that include enhanced use of non-timber forest products (NTFPs). The Platform will enhance and expand these

efforts by engaging with smallholders and rural communities in the targeted landscapes as appropriate, and by utilizing TRI Programme and TRI Kenya ASAL infrastructure for communications, engagement, capacity building, and enhanced outcomes at reduced cost. Landscapes and partnership arrangements will be further developed in the PPG stage.

- ? In the *Lake Bogoria* area to the northwest of Aberdare national park, RECONCILE, a national NGO with expertise in land-use rights and drylands management, is supporting participatory range land management by hosting a range of trainings on pasture management, range land re-seeding and rangeland management policy. The project is implemented within selected areas of the County, including the production landscape of Lake Baringo. The Platform will explore (in the PPG stage) whether a partnership in the degradation of these lands would be feasible and beneficial.

c) the proposed alternative scenario with a brief description of expected outcomes and components of the project

To address the above identified gaps for incentivizing, facilitating, mobilizing investment in, and supporting smallholder- and community-led restoration, a *Restoration Challenge Grant Platform for Smallholders and Communities, with Blockchain-Enabled Crowdfunding* will be established and operationalized. The Platform will utilize mobile cellular technology and payment transfer services to provide small grants/payments for smallholder-, community-, and school-led restoration work ? principally tree-planting ? matched by co-investment (in-kind and/or cash). Cellular technology will allow for efficient and effective verification of work and transfer of payments. Another key innovative focus of the Platform will be the integration of blockchain technology throughout the restoration value chain to provide transparency, build trust, facilitate real-time monitoring and evaluation and verification, and support mobilization of funding for restoration. From appropriate species selection, seed sourcing and seedling propagation, to tree planting and maintenance and transfer of payments, each transaction will be marked by a unique, traceable, unchangeable and verifiable blockchain. A second phase of the Platform will utilize a public-facing web platform and partnerships with other tree planting and restoration investment matching platforms to facilitate crowdfunding of Platform-supported restoration and financial sustainability, drawing upon the blockchain technology and ledger for security and transparency and trustworthiness of crowdfunded transactions.

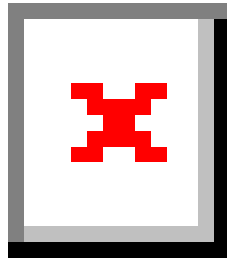
The Platform will initially be linked to The Restoration Initiative (TRI) GEF-6 programme to allow for use of TRI infrastructure for communications, engagement, capacity building, and enhanced outcomes at reduced cost. Upon successful development and implementation of the Platform including blockchain-enabled crowdfunding, the Platform will function as a freestanding initiative.

A key objective for the Platform will be to pilot, enhance knowledge and best practices on, and subsequently scale up successful approaches and technology - including use of blockchain technology, crowdfunding, mobile payments, and mobile-based monitoring of restoration - for engaging, incentivizing, mobilizing investment in, and supporting smallholders and rural community members in restoration. A range of engagement approaches and selection of a diverse group of landscapes will allow for cross comparison and learning to inform restoration initiatives going forward. Capture of lessons and sharing of best practices and approaches, and partnering with other global and regional initiatives and platforms supporting the restoration agenda including the Trillion Trees Initiative and

UN Decade on Ecosystem Restoration will be supported through a dedicated workstream and knowledge management and partnership strategy (Components 3 and 4).

The Platform will operate in part through the use of an Android^[35] cellular phone application, developed with project support in Q1 of the project. The Platform mobile phone application will support two key processes:

- o **Verification** of restoration work ? Utilizing the Platform mobile application, project participants will take geo-referenced photos for uploading. Uploaded photos can then be registered and reviewed by other project participants responsible for verifying restoration work and authorizing transfer of payments. The process of photographing and uploading geo-referenced photos can be repeated at determined intervals, facilitating monitoring and additional payments (for maintenance or other services) over the life of the project and beyond.
- o **Transfer of payments** ? Authorized payments will be transferred to participants through utilization of *M-Pesa*^[36], a low-cost mobile funds transfer service provider with extensive coverage throughout Kenya that does not require users to have a bank account to access its services. A similar funds transfer provider will be utilized in Cameroon, pending selection of identified landscapes in the PPG stage^[37].



Low-cost phones with pre-paid cellular plans capable of running the Platform's mobile application (see Box 1) will be provided to project participants, either to partnering *Community Entrepreneurs* charged with coordinating work and payments to participating *Restoration partners*, or directly to individual *Restoration partners*, or some combination of the above (TBD in PPG phase).

Incentive payments will be provided for verified initial work (e.g., tree planting), as well as for subsequent verification of work to maintain and protect Platform-supported restoration work. In

addition, the costs of procuring suitable, high-quality tree seedlings will be covered by the project and/or country partners (TBD in PPG phase), providing additional incentives for partnering smallholders and communities.

Pending the success of Phase I work to establish and operationalize the Platform, and positive results from initial engagement with project participants and restoration work, a second phase of the project will pursue more sustainable and scalable sources of funding for long-term sustainability. This will include crowdsource funding using blockchain technology to enable secure, traceable and trustworthy transactions, facilitated through a public web platform ? potentially linked to existing aggregating platforms like *TerraMatch* (see Baseline scenario) - and an awareness-raising campaign.

Project Components, expected Outcomes and Outputs

Component 1: Smallholder- and Community-led Restoration

Component 1 will establish the Platform mobile application and network of Platform-provided Android cellular phones needed to operationalize the Platform, and incentivize and facilitate Platform-supported restoration.

Outcome 1: Increased implementation of forest and landscape restoration by local community actors, with benefits for land, water, climate, biodiversity, and people.

Output 1.1: Platform mobile application supporting Platform through verification and payments transfer

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In the first quarter (Q1) of the Project, a private firm with suitable experience and a successful track record in developing and deploying mobile applications for the Android mobile operating system will be contracted to develop and support the Platform mobile application. The mobile application will be small enough in size and phone operating requirements to enable easy, fast, and reliable operation on low-cost Android-based mobile phones.

The Platform mobile application and associated back-end capabilities will facilitate verification of restoration work and transfer of payments to *Restoration partners* through the following elements:

? All users of the Platform mobile application will need to sign up and create personal accounts, using a simple process accomplished directly through use of the mobile application^[38]^[38]. Information required will at a minimum include name, address, and sex.

? Utilizing the Platform mobile application and participants' built-in phone cameras, registered users will be able to take photos of restoration work that include date and time stamping as well as geo-spatial coordinates identifying the location of each photo within a 3 meter circular perimeter of accuracy (TBD in PPG phase)^[39]^[39]. Other information, including the type of tree species, restoration site, and restoration work (e.g., initial planting, 6-month maintenance, 12-month maintenance, etc.) will also be simultaneously requested from the user and stored as part of the associated photo's information package. The mobile application will identify these restoration photos, store them on the phone's internal memory, and facilitate their uploading and linked information to the Platform's cloud-based server. Uploading of restoration photos to the Platform's cloud-based server can be done over a cellular service network or via wi-fi (TBD in PPG phase).

? Upon successful uploading of photo(s), users will receive notification that the photo(s) have been uploaded and are pending review, and given an option to delete the successfully uploaded photos to free up space on the mobile phone's internal memory.

? For the Platform Management Unit (PMU) and back end technical support, the mobile application will provide access to all stored information on registered users, photos and linked information. PMU and technical support will be alerted anytime new photos are uploaded to the cloud-based server.

? For the PMU and technical support, the mobile application will identify whether stored photos have been reviewed (see below), whether uploaded photos are duplicates (or potential duplicates due to proximity and other factors) of already uploaded photos, how long photos have been pending review, and for reviewed photos, the results from PMU review of photos.

? For the PMU, back-end review work will include examination of the uploaded photos and associated information. For each uploaded and reviewed photo, PMU member(s) will be able to enter a decision on the restoration work presented. Decision options will be: (a) verified; (b) not-verified; (c) impossible to determine.

? For each photo where supported restoration work has been verified by the PMU, the Platform mobile application will enable registered users to request payment via M-Pesa or other similar service provider in Cameroon. Requests for payment can be made for a single verified photo, or for a group of verified photos. [Note: whether M-Pesa will be embedded directly within the Platform mobile application, or accessed separately by users through the M-Pesa system, and with transactions recorded on the Platform mobile application via other means (manual data entry by PMC or automatic via link with M-Pesa), will be determined during development of the mobile application].

? Metrics that will be tracked by the back-end capabilities of the Platform mobile application include verified photos (total; by user; by landscape; by species; by service); verified payments (total; by user; by landscape; by species; by service).

? *Restoration partners* will have a dashboard on the mobile application that presents key information including: number of restoration photos on phone; number of uploaded restoration photos; number of verified, non-verified, and no decision photos; total pending payments; total payments received; as well as information on number of trees planted and maintenance and care reminders.

Output 1.2: Network of Platform-provided phones hosting Platform mobile app supporting *Restoration partners* and *Community Entrepreneurs*

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To enable partnership with poorer communities for which access to mobile phones and a cellular network capable of hosting the Platform mobile application may be a barrier, the project will provide a number of low-cost but sufficient phones to either *Community entrepreneurs*, or directly to registered *Restoration partners*. Provided phones will need to have: (a) a built-in camera capable of taking photos of sufficient resolution; (b) sufficient on-board memory to enable storage of a reasonable amount of restoration photos; (c) sufficient memory and hardware to host the Platform mobile application; (d) compatibility with the M-Pesa system.

Phones will be provided with pre-paid cellular minutes sufficient to allow uploading of a reasonable amount of restoration photos over cell service, connection with the M-Pesa system (or that of another low-cost funds transfer service in Cameroon), and to enable direct communication between support staff and users in the event that technical or other support is needed. It is anticipated that some Project participants may utilize the provided phones' cellular time for non-Project uses. To address this, a simple *Restoration Challenge Platform Rule Book* will be developed for Project participants during the

PPG phase, outlining a transparent 3-strike policy to build trust (See Component 2, Output 2.2 below for more information on the Rule book).

Depending upon local needs and circumstance, and to facilitate piloting of different approaches for engaging, organizing, supporting and incentivizing smallholder- and community-led restoration, phones will be provided to either *Community entrepreneurs*, or directly to registered *Restoration partners*. Where phones are provided to *Community entrepreneurs*, these individuals will have responsibility for engaging with local *Restoration partners*, photographing and uploading restoration photos, and facilitating payment to *Restoration partners*, either by being responsible for distributing authorized M-Pesa (or other low-cost funds transfer service in Cameroon) payments directly, or by requesting and recording payments to *Restoration partners* for verified work that are then sent directly to *Restoration partners* personal M-Pesa or other accounts and phones.

As emphasized in the project identification phase (see Box 1), for some poorer community members, literacy and the ability to use a cellphone may be a barrier. This will be addressed through the use of *Community entrepreneurs* capable of using the phones and application and working with *Restoration partners*, and/or basic training in phone use and literacy as needed.

The ability for cellphone users to electrically charge provided phones will be one criteria determining the distribution of phones. In communities where access to reliable electricity is a barrier to participation, the project may support provision of solar-powered charging stations for *Community entrepreneurs*, to be accessed by *Restoration partners* for charging of provided phones free of charge.

As with any technological application, it is anticipated that some users may experience occasional difficulties with both phones and the Platform application. To address this, the project will provide for sufficient technical support for provided phones, and any issues involving operation of the Platform mobile application. This service will be available during normal business hours.

Outputs 1.3, 1.4, 1.5: 400,000 trees planted and maintained as a result of Platform support and co-financing leveraged; At least 4,000 direct beneficiaries of Platform restoration grants, male & female; At least 5,000 ha of land under restoration; At least 5,000 ha of land under improved practices

Table 1 below provides estimates for the number of trees planted, number of direct beneficiaries, and hectares under restoration, as well as the size of incentive payments provided to *Restoration partners* per verified tree planted and for verified tree maintenance at 6 month intervals. Also shown in Table 1 is the payment amount per tree to nurseries for provision of high quality and appropriate tree seedlings. Note that incentive payments covering the costs of establishing tree stands are conservatively based on a recent ICRAF paper^[40] that examined costs of tree stand establishment in the Gambia, which has a dryer climate than found in Cameroon and parts of Kenya (costs of establishing tree stands are typically higher in dryer climates). The size of incentive payments to *Restoration partners* may be further refined in the PPG stage pending consultation with partners and further assessment.

Table 1. Assumptions underlying estimation of Platform impacts

Factor	# or Amount (USD)
# of registered <i>Restoration partners</i>	1,000
# of direct beneficiaries ^a	4,000
Average # of trees planted per registered <i>Restoration partner</i> ^b	500
Total # of trees planted with Platform support	500,000 ^c
Hectares under restoration (TBD in PPG phase)	5,000
Payment to <i>Restoration partner</i> per verified tree planted	\$0.40
Payment to <i>Restoration partner</i> per verified tree maintenance (6-month)	\$0.30
Payment to <i>Restoration partner</i> per verified tree maintenance (12-month)	\$0.30
Payment to <i>Restoration partner</i> per verified tree maintenance (18-month)	\$0.35
Payment to <i>Restoration partner</i> per verified tree maintenance (24-month)	\$0.35
Reimbursement to nurseries for each tree seedling picked up or delivered	\$0.40
Total payments for tree planting	\$400,000
Total payments for tree maintained	\$417,500
TOTAL direct payments to <i>Restoration partners</i>	\$817,500

an average household size of 4 for each registered *Restoration partner* is assumed.

anticipates that registered *Restoration partners* will have assistance in planting from household members and/or other community members.

^cAn 80% survival rate is assumed for planted seedlings that survive initial maturity, yielding 400,000 trees planted and maintained.

^dAssumes 400,000 verified 6-month payments; 350,000 verified 12-month payments; 300,000 verified 18-month payments; and 250,000 verified 24-month payments for tree maintenance given tree mortality, timing of tree planting and project closure.

To ensure the accuracy of the mobile photo-verification system and to guard against possible misuse and/or fraudulent claims, field auditing/verification of a random sample of uploaded photos covering 5-10% of transactions (TBD in PPG stage) will occur. This will be complimented by cross checking records of all seedlings provided to *Restoration partners* and/or *Community entrepreneurs*. The random field-verification approach will be described in the *Restoration Challenge Platform Rule Book* (See Component 2 below) and covered in the training provided to all *Restoration partners* and *Community entrepreneurs*. The Rule book and training will include clear rules defining any misuse of the the Platform application, incentive program, and Platform-provided phones, and consequences for misuse.

The project will support best-practice restoration, as defined through several foundational papers including Maginnis et al, 2005^{[41][41]} and practiced by IUCN, Bioversity International, and other Global Partnership on Forest and Landscape Restoration (GPFLR) members. Three core elements of this approach are (1) adoption of landscape-level planning supporting rational land use planning, stakeholder support and buy in, capture of synergies, and long term sustainability; (2) use of appropriate, non-invasive species that can thrive under anticipated climate change impacts, and that

provide anticipated and desired benefits; and (3) ensuring clarity of land tenure and access rights at restoration sites. The project will adopt the following approaches to ensure these outcomes:

- 1. Landscape-level planning** - PPG-stage identification of suitable landscapes and supported restoration interventions will be accomplished using outputs from landscape-level assessments and planning processes including prior assessments done in partnering countries with the Restoration Opportunities Assessment Methodology (ROAM)^[42], Species Threat Abatement and Recovery (STAR)^[43] assessments, and other similar approaches, and with full participation of stakeholders including those from partnering governments and targeted communities, complemented by relevant technical expertise and inputs from Bioversity International and IUCN.
 - 2. Use of appropriate species** ? A key focus of work detailed further under Outputs 2.2 and 2.3 will be ensuring the use of appropriate, high-quality, genetically diverse seedlings for project-supported restoration. An assessment^[44] of livelihood and ecological benefits of restoration in Cameroon revealed that lack of attention to species selection is partly responsible for the failures observed in landscape restoration, including over-dependence on exotic species, poor species-site matching and no consideration of genetic diversity. Poor diversity was also confirmed as a major constraint to successful restoration by a Bioversity global survey^[45]. The project will build capacity throughout the seed sourcing and seedling propagation value chain, and including among seed collectors, seed centers and nurseries. Bioversity International's long-standing program of work in this area and substantial in-house expertise and related tools including the *SeedIT* application and *Diversity for Restoration* tools will be drawn upon. The project will only cover costs and provide incentive payments to *Restoration partners* that use appropriately sourced and appropriately suited seedlings ? as recorded and verified through the project mobile application, records of partnering tree nurseries, and random field verification. This includes avoidance of exotic, non-native species. Bioversity has already identified 420 native tree species for use in restoration in Cameroon. Bioversity will compile a list of native tree species of interest for this project based their uses and services, habitat, conservation status, importance for women, and livelihood potential. A similar assessment of suitable species for restoration in Kenya will be done in the PPG stage of this project. *Restoration partners* will be able to choose among a subset of appropriate tree species, depending upon their utility and preference, to support agroforestry, sustainable timber production, fruit production, and more.
 - 3. Clarity of land tenure and access rights** ? Community support, avoidance of any unintended conflicts over access to the benefits of tree planting/restoration, and the sustainability of Platform-supported restoration is threatened wherever and whenever there is uncertainty of ownership over land under restoration, uncertainty on access rights to the timber and non-timber forest products generated by restoration activities, and/or potential for restoration to exacerbate inequality. PPG-stage work to identify suitable landscapes and partner communities for Platform-supported restoration will, following IUCN ESMS procedures, carefully screen against the selection of landscapes and partner communities where land tenure of potential restoration sites is not clear, where access rights to the timber and non-
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timber forest products generated by restoration activities is unclear, and/or where Platform-supported restoration has the potential to exacerbate inequality in partner communities.

Component 2: Awareness Raising and Capacity Building for Smallholders, Communities, and Community Entrepreneurs, and Seedling Supply Chain Actors

Component 2 will facilitate the engagement, on-boarding, training and support needed to bring the Platform's tools, incentives and other resources directly to smallholders and rural communities, and ensure that these resources are utilized effectively to support restoration, generating anticipated positive impacts for food and water security, climate change, biodiversity conservation, jobs creation, and more. In addition, Component 2 will address key gaps in the supply side of the restoration value chain, including establishment and/or strengthening of a sufficient network of tree nurseries in target landscapes able to meet local demand for tree seedlings of suitable species, quality, and genetic stock, as well as provide further support to *Restoration partners* in the form of point-of-pickup training on tree planting and care.

Outcome 2: Strengthened awareness of restoration opportunities and best practices among smallholders and rural communities; strengthened capacity for restoration among smallholders, communities, and seedling supply chain actors in target landscapes.

Output 2.1: At least 1,000 *Restoration partners* and 25 *Community entrepreneurs* registered with Platform following awareness-raising campaign in target landscapes

To project will utilize a number of means for building awareness and interest among smallholders and rural communities in targeted landscapes of the FLR Platform incentive program and its benefits and opportunities. This includes direct recruitment via door-to-door canvassing by trained *Community Entrepreneurs*, local events and workshops with food and potentially musical entertainment, and announcements and programming on local radio. It also includes meetings with community leaders, school officials, NGOs, and government agricultural, forestry, and natural resource field agents. In addition, the project will make use of TRI programme infrastructure and events including TRI-supported workshops and trainings in targeted landscapes, and the TRI internal and public web platforms.

By the end of Year 1 of the project, it is anticipated that 1,000 *Restoration partners* and 25 *Community entrepreneurs* in three partnering TRI countries and XX landscapes will have registered with the Platform and established accounts as a results of the awareness-raising and engagement activities under this output.

Note - PPG-stage work to identify partnering communities and suitable landscapes for restoration will provide a rough estimate for the potential size of the area that can be brought under restoration through project-supported tree planting, as well as the number of trees that can be planted using appropriate, best-practice tree spacing. In addition, as Restoration partners are engaged, registered and trained, project partners will keep track of the projected number of trees to be planted and maintained, based on consultation with Restoration partners and baseline analysis of restoration opportunities in partnering

communities and landscapes. Depending upon local demand, and provision of co-financing from partnering country governments and/or crowdfunding, the number of Restoration partners may need to be capped to ensure that sufficient funding is available to cover all verified requests for payments from Restoration partners for tree planting and subsequent maintenance.

Output 2.2: At least 1,000 Restoration partners and 25 Community entrepreneurs trained on use of Platform mobile app, use of Platform-provided phones, and restoration practices

For all registered *Restoration partners* and *Community entrepreneurs*, training will be provided on the use of the Platform mobile application, the use of Platform-provided phones, as well as on supported best practices in restoration including tree species selection, planting, and maintenance. All of the information covered in trainings will be consolidated in a simple to understand *Restoration Challenge Platform Rule Book* provided to registered *Restoration partners* and *Community entrepreneurs* (hereafter referred to as the "Rule book?"). The Rule book will include clear guidance on permitted uses for any Platform-provided phones, as well as misuse of the platform application and incentive programme. A transparent, 3-strike policy will be employed to build trust among community partners.

Trainings will be hands on, with registered *Restoration partners* and *Community entrepreneurs* guided through all key features and steps of the Platform mobile application and associated elements. This includes:

- ? Training on how to download and install Platform mobile application (for non Platform-provided cellphones; Platform-provided cellphones will come with Platform mobile application pre-installed); open the Platform mobile application and log into participants user account and view information on the user dashboard showing an overview of user's Platform-supported restoration work.
- ? Training on how to use the Platform mobile application to take photos of restoration work, including how close to position camera, what to include in the photo, what kind of lighting is required, how to check that the photo is usable, and how to enter simultaneously requested information on tree species, type of work, and more.
- ? Training on how to use the Platform mobile application to upload restoration photos; check to see if photos have been successfully uploaded; how to delete successfully uploaded photos; and how to check the status/results of photo verification.
- ? Training on how to use the Platform mobile application to request payment for verified restoration work, and check the status of payment transfers through M-Pesa.
- ? Training on how to receive payments from M-Pesa [note: whether payments are distributed to directly to *Restoration partners* M-Pesa accounts or by facilitation with *Community entrepreneurs* will be determined during the PPG stage, and possibly during project implementation]
- ? Training on where and how to access technical support in case of any difficulty in using the Platform mobile application

Trainings on use of Platform-provided cellphones, as well as Platform-linked cellphones will include:

- ? General phone literacy, charging procedures, use of cellular service vs. wifi, accessing the Platform mobile application, use/access of the built-in camera and stored photos, and managing restoration photos to stay within phone memory limitations

- ? For Platform-provided cellphones with prepaid minutes, training on permitted and non-permitted uses and how to stay within the pre-paid cellular data limits.
- ? Training on how to electrically charge cellphones, and for communities lacking reliable electricity, training on how to access the Platform-provided support (solar electrical charging station(s)) that will be made available.
- ? Training on where and how to access technical support in case of any difficulty in using the Platform-provided or Platform-linked cellphones

Training on supported best practice restoration practices will cover the following:

- ? Training on selection of suitable tree species and genetic stock. Note that work to assess suitable tree species and genetic stock for targeted landscapes will be performed in part during the PPG stage and continued as needed during project implementation, with the support of Bioversity international⁴⁶ in partnership with IUCN (work that is funded under Output 2.3 below). Though only suitable tree species and genetic stock will be provided at partnering nurseries and eligible for Platform incentive payments when used in restoration, community members will most likely need to choose among a number of alternative planting options to meet individual and site preferences and needs. This training will help participants make choices well-suited for their particular needs and the particular needs of the restoration site(s).
- ? Training on best practice tree planting and tree maintenance
- ? Training on where and how to access technical support in case of any issues regarding Platform-supported restoration

To reach a sufficient number of smallholders and communities in a cost-effective manner, the project may employ a train-the-trainers approach with *Community entrepreneurs* employed and trained on how to organize and present capacity-building trainings for target communities.

It is envisioned that capacity building trainings will take place throughout the life of the project, as new *Restoration partners* are engaged and on-boarded, and the project expands its geographical coverage.

Output 2.3: At least 1 tree nursery(s) in each target landscape established and/or strengthened and providing seedlings of suitable species and genetic stock to meet local demand, with point-of-transaction training on planting and care

A significant barrier to effective restoration in select landscapes is in the availability/provision of an adequate supply tree seedling of suitable species, genetic stock, and quality. A lack of adequate supply means delays in restoration and limits on the impacts and scale of restoration. Moreover, planting inappropriate and ill-suited tree seedlings can result in high levels of tree seedling mortality, and sub-optimal and/or less-than-anticipated benefits from tree planting, whether those benefits include generation of non-timber forest products (e.g., resins, fruits, nuts), timber, soil stabilization, carbon sequestration, biodiversity conservation, or other benefits. When restoration fails to deliver on anticipated benefits, community members are less likely to invest in the maintenance of planted trees,

resulting in loss of investment. Even worse, planting of ill-suited and inappropriate seedlings can have harmful effects, such as in cases where planted species act as invasive species, damaging local ecosystems.

As described in the section above under Baseline scenario, Cameroon and Kenya differ with respect to the presence of programs supporting tree nurseries and the presence and capacity of local tree seedling nurseries that are able to provide high-quality seedlings of suitable species and genetic stock to meet local demand. In both countries, the Project will build on, coordinate and partner with existing programs to establish and strengthen local tree nurseries as needed in targeted landscapes. Factors that will be assessed in the PPG stage include the presence and capacity of tree nurseries in existing landscapes, and the supply chains supporting these tree nurseries, including both public and private sectors.

Support provided by the project to meet identified gaps will include:

- ? Support for the selection of suitable species for propagation
- ? Support for the procurement of suitable seeds with robust genetic diversity
- ? Support and capacity building to strengthen the capacity (efficiency, productivity, scale) of tree nurseries, and in adopting best practices for the propagation, care, and transport of tree seedlings.
- ? Support for the use of the *SeedIT* application developed by Bioversity International for tree nursery and outreach staff, to collect and map the information of individual trees used for seed collection and propagation and support the identification of suitable tree seedlings for individual restoration sites.

To support the tracking and transparency of the restoration value chain, the *SeedIT* application will be enhanced through development and integration of a blockchain ledger and supporting software (see Component 4 below for more on blockchain technology) marking the key steps and transactions preceding the planting of seedlings. This includes species selection, seed sourcing and genetic diversity, propagation, and pickup or delivery of seedlings to restoration sites.

To help reinforce training on best practices for planting and maintenance of tree seedlings, partnering tree nurseries will be trained on providing simple, species-specific guidance to *Restoration partners* at point-of-transaction (pickup or delivery of seedlings). To facilitate verification of Platform-supported restoration work, records of all seedlings provided to *Restoration partners* and/or *Community entrepreneurs* will be obtained and matched with uploaded restoration photos during the verification process.

Component 3: Knowledge Capture and Dissemination

Component 3 of the project will ensure that Platform experiences in piloting new approaches for engaging, incentivizing, mobilizing investment in, and supporting smallholders and rural community members in restoration are adequately monitored, evaluated, and developed into high-quality knowledge products that are disseminated through relevant knowledge platforms and fora, so that these experiences can inform and further support restoration efforts going forward.

To this end, a knowledge capture and learning strategy will be developed during the PPG stage of the project, clearly delineating the means for monitoring, evaluating, and sharing Platform experiences to be impactful.

Areas for inquiry, around which the Platform learning strategy will be designed to address, would include the following:

- ? Best practices for engaging smallholder and rural communities in restoration, including building awareness, support and capacity for restoration, and considering socioeconomic, cultural, and environmental factors.
- ? Best practices in use of cellular mobile technology for incentivizing smallholder and rural communities in restoration, and considering socioeconomic, cultural, and environmental factors.
- ? The effectiveness of smallholder- and rural community-led restoration, considering factors such as landscape, degradation, tree species, follow-on maintenance and care, and more.
- ? Best practices in utilizing blockchain technology and other tools for mobilizing crowd-sourced funding of smallholder- and rural community-led restoration
- ? Best practices in addressing gaps in the supply of tree seedlings of suitable species and genetic stock to meet local demand and restoration needs, considering market and other socioeconomic factors.

Along with capture and dissemination of knowledge and opportunities for partnership, the Platform will directly engage with other aligned initiatives and platforms that promote and support the restoration agenda, including the Trillion Trees Initiative, UN Decade on Ecosystem Restoration, TerraMatch and others, to identify and partner where suitable opportunities are found.

Outcome 3: Improved knowledge of best practices for engaging, supporting, and incentivizing restoration by smallholders and rural communities

Output 3.1: 1 case study per targeted landscape on Platform-supported work and 1 Consolidated Report on Platform experiences with recommendations, including on Phase II scale up, developed and disseminated through relevant knowledge platforms

For each targeted landscape where the Platform engages, a case study will be developed based on the Platform learning strategy, and that considers the particular socioeconomic, cultural, environmental factors, and Platform-supported activities, that together are likely to have played a role in the effectiveness of supported restoration work. Inputs to case studies will include household surveys of *Restoration partners* and *Community entrepreneurs*, as well as other community members. Case studies will also take advantage of the wealth of data collected by the Platform mobile app and Platform-provided cellular phones.

In the last quarter of the project, a Consolidated Report, based upon developed and included case studies, and that also covers the Phase II scale up using blockchain technology to mobilize crowd-sourced funding for smallholder- and rural community-led restoration, will be developed. Along with a synthesized review of Platform experiences, the Consolidated Report will provide recommendations to help inform restoration efforts going forward.

Case studies and the Consolidated Report will be disseminated through relevant knowledge platforms including the websites and related knowledge portals of IUCN, Bioversity International, the GEF, partnering governments, and other relevant and mission-aligned organizations.

Output 3.2: 1 presentation at GLF or similar global forum on Platform experiences & recommendations; 1 high-level roundtable with government and private-sector partners in each country where Platform is engaged

To bring the results of this platform to the fora where it is likely to have the largest impact, the Platform will support 1 presentation of Platform work and experiences at a Global Landscape Forum^[47] event or similar forum. To help promote national-level awareness, learning and action of successful approaches for engaging, incentivizing, mobilizing investment in, and supporting smallholders and rural community members in restoration, in each country where the Platform is engaged, the Platform will support 1 high-level roundtable with government and private-sector partners.

Output 3.3: Collaboration/coordination with other platforms that promote the restoration agenda

As noted in the above section on the baseline scenario and any associated baseline projects, a number of initiatives and platforms, including The Restoration Initiative, the Trillion Trees Initiative and UN Decade on Ecosystem Restoration, as well as contributing platforms such as the recently launched TerraMatch by WRI and Mastercard's Priceless Planet Coalition, as well as the search engine Ecosia, potentially offer suitable opportunities for partnership, dissemination and use of the Platform's technology and approach. Under Output 3.3., the Platform will directly engage with these initiatives and others, to identify and pursue suitable opportunities for partnership that further shared objectives for mobilizing funding and scaling up restoration.

Component 4: Phase II Scale up and Financial Sustainability

Component 4 of the project will build a platform and undertake awareness-raising and engagement activities to facilitate mobilization of crowdfunding for Platform-supported smallholder- and community-led restoration. Successful development of this funding approach will allow for scaling up ? in terms of the number of *Restoration partners* and *Community Entrepreneurs* engaged, trees planted, hectares under restoration, associated carbon sequestration and social benefits, and potentially landscapes covered ? as well as medium-term financial sustainability of the Platform, with reduced or minimal support from public sources of finance.

Crowdfunding has become an increasingly popular alternative to traditional venture capital and other means (e.g., corporate and private philanthropy) for financing both for-profit and non-profit ventures, and allowing both non-traditional projects and projects from traditionally disenfranchised groups

access to capital. As of 2020, some \$34 billion USD has been raised globally through crowdfunding initiatives, and the global crowdfunding market is projected to nearly triple by 2025.^[48]⁴⁸ A growing number of crowdfunding platforms are in operation, and they differ with respect to the type of projects they promote (e.g., education, personal crowdfunding, nonprofit ventures, creative projects, and more), the types of fees these platforms charge to facilitate transactions, the tools they offer to help promote projects, level of customer support, and more^[49]⁴⁹.

One key challenge to successful crowdfunding is building and ensuring trust between crowdsourced investors and investees that crowdsourced funds are utilized in the manner as advertised and promised. This is particularly salient where funders and investees are separated by large physical and cultural differences, do not know each other, cannot readily monitor the progress and effectiveness of ventures as is often the case in non-profit social and environmental ventures where investors will not see a financial return on their investment, and have to rely largely upon the good will and reputation of investees and/or intermediaries. The potential for scams has been realized many times, as in the recent case of a homeless veteran and investors swindled out of \$400,000 of GoFundMe crowdsourced funds by a couple posing as Good Samaritans^[50]⁵⁰.

One key technology with the potential to address these risks as well as facilitate enhanced monitoring, evaluation, and learning is blockchain technology ? one of six technologies identified by the Scientific and Technical Advisory Panel (STAP) of the GEF as being of relevance to the GEF.^[51]⁵¹

A blockchain is a type of database that is replicated over a network, and that allows multiple users in the network to access, share, maintain, and update the content of the database, in real-time, safely and securely, based on an agreed consensus mechanism, and without the need for a trusted central authority. Essentially, the blockchain is a secure, unchangeable (once data is entered), and transparent digital ledger that can facilitate efficient, decentralized and trustworthy transactions between parties that do not know each other and/or are separated by large distances. For all these reasons, blockchain is becoming an increasingly integral part of crowdfunding platforms and approaches^[52]⁵²,^[53]⁵³,^[54]⁵⁴, including those that utilize cryptocurrencies as well as those that do not^[55]⁵⁵.

In the context of the Platform, use of blockchain technology will allow for the following:

? Secure transactions ensuring that payments from crowdsourced investors are transparently linked to unique, non-duplicative, identifiable and specific restoration actions in specific places. That is, crowdsourced payments will be linked to individual trees planted and maintained (including

coordinates of planted trees), and communities (potentially down to the level of the individual smallholder pending privacy concerns).

? Crowdfunded payment transactions will also be linked to upstream information on the species selection, seed source and genetic diversity, and the nursery where seedlings were grown. This information, captured in a blockchain ledger that is integrated into the *SeedIT* application under Output 2.3, will provide further confidence to investors that their investments are going towards supporting restoration using high-quality seedlings of appropriate species and genetic stock matched to site location requirements and suitability.^[56]⁵⁶

? Transparent and more reliable monitoring of environmental and social benefits from crowdfunded and Platform-supported restoration. With more detailed and secure recording of restoration work captured in the blockchain ledger, subsequent monitoring of environmental and social benefits arising from restoration work will have additional reliability and verifiability. The Platform will explore linkages to other third-party data sources and tools including use of satellite imagery and geospatial tools and platforms to further track and monitor results of Platform-facilitated restoration, including the IUCN Bonn Challenge Barometer^[57]⁵⁷, WRI Global Forest Watch^[58]⁵⁸, and others.

? The blockchain ledger will be made available to the restoration research community, to further enhance transparency and trust, and enable subsequent evaluation and study of Platform-supported restoration work.

To put this technology to use in mobilizing crowd-sourced investment supporting smallholder and community-led restoration work, the project will develop a public-facing web portal, with underlying blockchain-powered software linked to the Platform mobile application system. An awareness-raising campaign will be implemented to build public awareness of the crowd-sourced restoration investment opportunities and associated environmental (including carbon sequestration) and social benefits, utilizing a variety of outreach and communication means. Links and potential partnership with aligned aggregator platforms and partners including *TerraMatch*, the *Priceless Planet Coalition*, *Ecosia* and others will be explored.

Outcome 4: Strengthened capacity and instruments for scaled-up investment in smallholder- and community-led restoration

Output 4.1: 1 public web platform with blockchain-supported technology to attract, enable, and verify crowd-funding investment in Platform-supported smallholder- and community-led restoration

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Under Output 4.1. a public web platform and underlying software system will be developed to facilitate secure and transparent crowd-funding of Platform-supported smallholder- and community-led restoration. The web platform and underlying software system will have the following components/features:

? Well-designed overview of the Platform (including a short video produced under Output 4.2), the challenge of land degradation and opportunity presented by restoration and its associated

environmental (including carbon sequestration) and social benefits, and the need to scale up investment in smallholder and community-led restoration

? Platform investment opportunities, the different landscapes where the Platform is engaged, links to smallholders and communities, and how blockchain technology allows for investment to be linked securely and transparently to specific restoration work including upstream species selection, seed collection and propagation, and partnering communities and *Restoration partners*

? Real-time updated metrics on the number of trees planted and maintained, investment mobilized, and benefits for climate, communities, biodiversity, and more.

? Facilitation of payments, using PayPal or other provider (TBD in implementation phase), with payments charged only upon verification of promised work ? facilitated through links to Platform mobile application, Platform engagement and audit processes, and blockchain-powered software and approach. Transactions will be linked to specific trees and landscapes, with environmental benefits (including carbon sequestration) and social benefits quantified, to help attract a broader range of interested investors and organizations, including those interested in offsetting their carbon emissions through carbon sequestration achieved by the trees.

Development of the web platform and underlying software will start in Year 1, and the public web platform will go live in Year 2.

Output 4.2: Awareness-raising campaign on crowd-funding opportunities for Platform-supported smallholder- and community-led restoration, and potential partnership with aligned platforms

Alongside information presented on the public web platform developed under Output 4.1, an awareness-raising campaign utilizing a variety of outreach and communication means, will be implemented to build awareness of the Platform's crowd-sourced restoration investment opportunities. Links and potential partnership with aligned aggregator platforms and partners including *TerraMatch*, the *Priceless Planet Coalition*, *Ecosia*, and others will be explored.

Elements of the awareness raising campaign shall include the following:

? A short video overview of the Platform, the challenge of land degradation and opportunity presented by restoration, and the need to scale up investment in smallholder and community-led restoration, and the investment opportunity presented by the Platform. This video will be shared and hosted on a number of portals including the public web portal developed under Output 4.1, the IUCN website, TRI agency partner websites of FAO and UNEP, and more.

? Presentations at relevant global and regional events, potentially including a GLF Investment Forum event, UNCCD COP, Trillion Tree Campaign event, UN Decade on Ecosystem Restoration event, AFR100 event, and/or other similar fora.

? Outreach to news organizations to develop and publish stories about the Platform and investment opportunity.

? Application, and organization for a TED^[59] or TEDx event, building on the experiences of the GEF, Plastic Bank, IUCN and other organizations that have developed successful TED events and used these to promote further investment and growth of initiatives.

? Outreach to aligned aggregator platforms and partners including *TerraMatch, the Priceless Planet Coalition, Ecosia* and others, and partnership/links to ensure that the Platform's crowdsourced restoration opportunities are available and known to a wide range of potential investors.

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Output 4.3: \$250,000 USD of crowd-sourced investment in Platform-supported restoration transacted

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With work to develop the web-portal and awareness-raising campaign beginning in Year 2, it is anticipated that 20 months of operating the web-portal investment window, including through potential partnership with other aligned initiatives identified under Output 3.3, would yield \$250,000 USD in crowd-sourced investment, with minimum investment of \$5 USD, and an average investment of \$20 USD, generating something on the order of an additional 50,000 trees planted and/or maintained.

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d) alignment with GEF focal area and/or Impact Program strategies

The project is aligned with and supportive of the GEF Land Degradation Focal Area strategy and its two principle objectives for GEF-7.

At the strategic-level, the project is aligned with the following approaches, identified in the Programming Document for the Seventh Replenishment of the GEF Trust Fund^[60]60:

? *The GEF will focus on innovative approaches that can be scaled up to maximize global benefits for the environment and also address the issues of biodiversity, climate change, and local livelihoods.* As described further in Section G below, a key objective of the project is to develop, pilot, refine, and scale up, new innovative approaches for incentivizing and engaging smallholders and rural communities in restoration. Numerous studies have shown the potential for restoration to generate significant global environmental benefits including those for biodiversity and climate change, while simultaneously delivering benefits to local livelihoods^[61]61, ^[62]62, ^[63]63. This project will address barriers to enhanced rural smallholder and community participation in restoration that are essential to overcome in order to facilitate restoration at the needed scale. Innovative approaches employed by the project include use of mobile cellular technology to reduce transaction costs and provide direct incentives for restoration to smallholders and rural communities, and use of blockchain technology to attract and facilitate secure crowdfunding of the Platform, supporting scale up and financial sustainability of the Platform. A key focus of the project will be to assess the project-supported piloted approaches, to capture lessons, and disseminate these widely (Component 3) so that they can inform restoration efforts and initiatives going forward, supporting further scaling up of restoration.

? *Focal Area investments will focus on production landscapes where agricultural and rangeland management practices underpin the livelihoods of poor rural farmers and pastoralists.* This project is targeted at rural mixed-use landscapes where agriculture and pastoralism make up the largest share of

the economy, and poverty is generally higher per capita than that of urban areas. The restoration work incentivized by the project in these areas will include on-farm investments in agroforestry, community woodlots, and other areas including naturally-assisted regeneration of areas adjacent to production lands that are important for provision of pollination, clean water, wind and erosion control, and other ecosystem services.

? ?Access to finance and technical assistance for smallholders and small businesses in most land sectors is a big challenge. Small and medium-sized enterprises (SMEs) are critical contributors in the agricultural sector at the leading edge of both environmental impact and solutions to mitigate these.? The project will provide access to direct incentive payments as well as technical assistance for rural smallholder farmers and communities for restoration work. Financial and technical assistance will address up-front costs and barriers to restoration, including costs of planting and subsequent maintenance and care, and support for upstream supply of viable, appropriate (in terms of species and genetic stock) and healthy tree seedlings and other restoration inputs.

The project supports the LD focal area's two objectives in the following ways:

Objective 1: Support on the ground implementation of SLM to achieve Land Degradation

Neutrality. Project investments supporting restoration are a direct complement to GEF-7 LD Impact Programme investments combating land degradation and deforestation, particularly those of the *Food Systems, Land Use and Restoration* Impact programme. Project tools and approaches can potentially be drawn upon and integrated in GEF-7 IP investments, and those of partnering governments. In addition, project links to the GEF-6 TRI programme support enhanced outcomes in ongoing and relevant GEF investments with aligned objectives.

Objective 2: Creating an enabling environment to support voluntary LDN target implementation.

While much of the focus of GEF investments to achieve Objective 2 of the LD focal area strategy are directed at national-level policy, this project supports those efforts by piloting and scaling up solutions from the ground level up, including those supporting smallholders, building local capacity, and developing monitoring and information systems for restoration (here through development and piloting of the mobile Platform). These efforts are in-line with country initiatives and work to create an enabling environment supporting LDN target implementation.

e) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

A key objective for the Platform will be to pilot, enhance knowledge and best practices on, and subsequently scale up successful approaches and technology - including use of blockchain technology, crowdfunding, mobile payments, and mobile-based monitoring of restoration - for engaging, incentivizing, mobilizing investment in, and supporting smallholders and rural community members in restoration. The identified technologies and innovative approach described herein for partnering with and supporting smallholder- and community-led restoration will address key barriers that have thus far limited participation of rural communities in restoration, and limited the size of the restoration marketplace, including the number of high-quality restoration investment opportunities.

As noted above, the current baseline scenario, with significant and growing country commitments to restoration and a substantial number of organizations and initiatives support restoration efforts throughout much of the world, is still on a trajectory falling far short of achieving restoration at the needed scale. A 2019 progress report on the New York Declaration on Forests finds that five years after the NYDF call extending the Bonn Challenge restoration target to 350 million hectares by 2030 there is little evidence that these goals are on track, and achieving the 2020 NYDF targets is likely impossible. So far, only a fraction of the committed restoration goals has been realized as increases in forest or tree cover.^[64]

A range of engagement approaches and selection of a diverse group of landscapes will allow for cross comparison and learning to inform restoration initiatives going forward. Capture of lessons and sharing of best practices and approaches, and partnering with other global and regional initiatives and platforms supporting the restoration agenda including the Trillion Trees Initiative and UN Decade on Ecosystem Restoration will be supported through a dedicated workstream and knowledge management and partnership strategy (Components 3 and 4).

f) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

Estimated Global Environmental Benefits from this project will be further assessed during the PPG stage. Preliminary estimates include:

- ? At least 5,000 hectares under restoration
- ? At least 5,000 hectares under improved practices (excluding protected areas)
- ? XX tons CO₂eq mitigation
- ? At least 4,000 direct beneficiaries of Platform restoration grants, male & female

g) innovation, sustainability and potential for scaling up

The project provides many opportunities to pilot and develop innovative approaches to addressing global environmental problems, particularly those involving smallholders and rural communities, as well as opportunities and potential for scaling up and sustainability. Innovative, scalable and sustainable elements include:

- ? Use of mobile cellular technology to incentivize and facilitate enhanced involvement of smallholders and rural communities in restoration
 - ? Use of mobile cellular technology to facilitate cost-effective verification and direct payment of smallholder- and community-led restoration
 - ? Partnership with local *Community entrepreneurs*, schools, nursery owners and others to support smallholder- and community-led restoration
 - ? Use of blockchain technology to attract and facilitate transparent and secure crowdfunding of the Platform, supporting scale up and financial sustainability of the Platform
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The Platform is a true pilot, where we expect to encounter and solve challenges unique to the deployment and tailoring of the applied technology and approach. While there are ongoing initiatives and programs targeting smallholders and rural communities that can serve to inform the Platform, as well as existing tools and technology that can be drawn upon, never before have they been applied in the manner described herein to the particular challenges of smallholder- and rural community-led restoration, and financing these efforts over the medium and long term.

The facilitation of crowdsource funding under Component 4 of the Platform, that includes a public web platform with blockchain-supported technology to attract, enable, and verify crowd-funding investment in Platform-supported smallholder- and community-led restoration, as well as an awareness-raising campaign to build awareness of the Platform's crowd-sourced restoration investment opportunities, are key parts of the strategy to make the Platform a self-sustaining, self-financing enterprise. The strategy is predicated on a disconnect between a large pool of social- and environmental-impact and other like-minded investors interested in supporting smallholder- and community-led restoration, and access to viable and trustworthy investment opportunities. If just a fraction of growing pool of conservation investments⁶⁵ estimated at \$8 billion from 2004-2015⁶⁵ were directed towards the restoration opportunities identified by the Platform and other restoration initiatives adopting this approach, the mobilized funding would be more than sufficient to cover scaled up operational costs with little to no public funding.

As noted below, capturing and disseminating project experiences and best practices to inform, further support, and scale up restoration efforts going forward is a key focus of the project. These efforts comprise all the work under Component 3 of the project.

^[1] <https://www.iucn.org/theme/forests/our-work/forest-landscape-restoration/restoration-opportunities-assessment-methodology-roam>

^[2] GPFLR (2011). *A World of Opportunity*. Online at: http://www.wri.org/sites/default/files/world_of_opportunity_brochure_2011-09.pdf

^[3] <http://www.fao.org/forest-farm-facility/en/>

^[4] <https://www.saveourspecies.org>

^[5] <https://plasticbank.com>

^[6] FAO (2011). The state of the world's land and water resources for food and agriculture (SOLAW) ? Managing systems at risk. Food and Agriculture Organization of the United Nations, Rome, Italy.

^[7] United Nations Economic and Social Council, Economic Commission for Africa (2007). *Africa Review Report on Drought and Desertification in Africa*. Online at http://www.un.org/esa/sustdev/csd/csd16/rim/eca_bg3.pdf

^[8] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystems Services, 2018. Summary for policymakers of the thematic assessment report on land degradation and restoration.

^[9] Ibid 4

^[10] GPFLR (2011). *A World of Opportunity*. Online at: http://www.wri.org/sites/default/files/world_of_opportunity_brochure_2011-09.pdf

- [11] Bastin J.F., et al., (2019) The global tree restoration potential, *Science*, 5 July 2019.
- [12] ELD Initiative & UNEP (2015). *The Economics of Land Degradation in Africa: Benefits of Action Outweigh the Costs*. Available from www.eld-initiative.org
- [13] <https://www.bonnchallenge.org>
- [14] <https://www.1t.org>
- [15] Millennium Ecosystem Assessment (2005). *Ecosystems and Human Well-being: Synthesis*. Island Press, Washington, DC
- [16] Nkonya, E., ed.; Mirzabaev, A., ed.; and von Braun, Joachim, ed. (2016). *Economics of land degradation and improvement- A global assessment for sustainable development*. Cham, Switzerland: Springer International Publishing.
- [17] <https://www.bonnchallenge.org>
- [18] <https://www.trilliontreecampaign.org>
- [19] <https://www.wri.org/our-work/project/terramatch>
- [20] <https://www.mastercard.us/en-us/vision/corp-responsibility/priceless-planet.html>
- [21] See: <https://www.gofundme.com/c/blog/top-crowdfunding-sites>
- [22] See: <https://www.finder.com/top-crowdfunding-sites>
- [23] <https://afr100.org>
- [24] <http://www.cpfweb.org/95464/en/>
- [25] <http://www.restool.org/en/index.php>
- [26] <https://www.iucn.org/regions/washington-dc-office/our-work/species-threat-abatement-and-recovery-star-metric>
- [27] <https://sustainifi.com>
- [28] See: <https://www.vodafone.com/what-we-do/services/m-pesa>
- [29] See: <https://www.forbes.com/sites/tobyshapshak/2018/11/27/how-mobile-money-continues-to-boom-in-africa/?sh=f4a049e205cb>
- [30] <https://www.reuters.com/article/us-cameroon-forest-environment/cameroon-steps-up-reforestation-efforts-but-forest-loss-continues-idUSKBN170393>
- [31] <https://events.globallandscapesforum.org/how-national-restoration-policies-are-made-congo-basin/>
- [32] Native species under limited propagation in Cameroon include *Azadirachta indica*, *Cassia seamea*, *Acacia nilotica*, *Azelia lebeck*, *Triplochiton scleroxylon*, *Baillonella toxisperma*, *Lovoa trichilio?des*, *Terminalia superba*, *Lophira alata*, *Entandrophragma cylindricum*, *Podocarpus manii*, *Grevillea robusta*, *Acacia mangium*, *Antandrophragma angolensis*, *Maesopsis iminii*, *Prunus Africana*, *Voacanga amigdalina*, *Irvingia gabonensis*, *Dacryodes edulis*). From November 9, 2020 communication with Christopher Kettle and Marius Ekeu of Alliance Bioversity-CIAT.
- [33] http://www.kenyaforestservice.org/index.php/index.php?option=com_content&view=article&id=503:forest-and-landscape-restoration-program-in-kenya&catid=81&Itemid=538
- [34] From November 9, 2020 communication with Christopher Kettle and Marius Ekeu of Alliance Bioversity-CIAT.
- [35] <https://www.android.com>
- [36] <https://www.vodafone.com/content/index/what/m-pesa.html>
- [37] In Cameroon, the country's three main mobile networks (Orange, MTN, Camtel) also have popular mobile banking systems that are increasingly used to transfer funds and to make payments at supermarkets, restaurants, or to purchase train and taxi tickets.

[38] Sign-up and registration can be done during awareness-raising and capacity-building workshops, or subsequently.

[39] The accuracy of smartphones in determining spatial location is dependent upon a number of factors including accuracy of the broadcast GPS signal (including the geometry of the GPS satellite network at the time of GPS signal broadcasting), as well as local factors including signal blockage, atmospheric conditions, and receiver design features and quality. According to a 2020 US government report [see: <https://www.gps.gov/technical/ps/2020-SPS-performance-standard.pdf>], with current (2018) Signal-in-Space (SIS) accuracy, well-designed GPS receivers have been achieving horizontal accuracy of 3 meters or better and vertical accuracy of 5 meters or better 95% of the time.^[39] However, as the assessment indicates, the quality of the embedded GPS receiver is a factor in determining the accuracy of the positioning calculation. A real-world 2018 study by the UN Refugee Agency that tested the accuracy of 7 commonly-used mobile phones found that observed errors ranged from less than 1m to a maximum of 10 m [see: https://blog.cartong.org/wordpress/wp-content/uploads/2019/03/Assessment_GPS_Accuracy_Mobile_Devices.pdf]. So-called dual-frequency mobile smartphones with the capacity to measure two satellite GPS frequencies simultaneously are coming on the market and promise to provide accuracy within 30 cm [see: <https://medium.com/@sjbarbeau/dual-frequency-gnss-on-android-devices-152b8826e1c>]. Refurbished phones with dual-frequency capacity are around \$250 USD and higher [From October 19, 2020 communication with Mark Ellis-Jones of Sustainifi]. It should be noted that accuracy within 3m or less is likely not needed for the purposes of the Platform, as uploaded geo-referenced photos will be cross-checked with additional information including registration of Restoration partners, delivery and/or pick up of tree seedlings, and restoration sites.

[40] Duguma L.A., et al. 2020. From Tree Planting to Tree Growing: Rethinking Ecosystem Restoration Through Trees. ICRAF Working Paper. Available online at: <https://www.worldagroforestry.org/publication/tree-planting-tree-growing-rethinking-ecosystem-restoration-through-trees>

[41] Maginnis, S., Rietbergen-McCracken, J., Jackson, W. (2005). *Restoring Forest Landscapes, An Introduction to the Art and Science of Forest Landscape Restoration*. Technical Series N., 23. Yokohama: ITTO

[42] For information on the Restoration Opportunities Assessment Methodology (ROAM) developed by IUCN and WRI to support identification of restoration opportunities and selection of suitable restoration interventions, see: <https://www.iucn.org/theme/forests/our-work/forest-landscape-restoration/restoration-opportunities-assessment-methodology-roam>

[43] <https://www.iucn.org/regions/washington-dc-office/our-work/species-threat-abatement-and-recovery-star-metric>. Note that STAR assessments developed under The Restoration Initiative for Kenya and Cameroon, identifying areas of high-conservation value, threatened species, and other important information for the planning of restoration, will be utilized.

[44] Taedoum E. Hermann, Manga Essouma Fran?ois, Eku? Marius R.M. 2019. Evaluation des moyens de subsistance et des avantages ?cologiques des initiatives de restauration au Cameroun. Bioversity Report. 72 p

[45] Kettle, Christopher (Alliance Bioversity-CIAT) Jalonen, R., Valette, M., Boshier, D., Duminil, J. & Thomas, E. 2018. Forest and landscape restoration severely constrained by a lack of attention to the quantity and quality of tree seed: insights from a global survey. *Conservation Letters*, 11(4): p.e12424

[46] <https://www.bioversityinternational.org>

- [47] <https://www.globallandscapesforum.org>
- [48] See: <https://blog.fundly.com/crowdfunding-statistics/>
- [49] See: <https://www.gofundme.com/c/blog/top-crowdfunding-sites>
- [50] See: <https://www.inquirer.com/philly/news/breaking/johnny-bobbitt-jr-gofundme-money-kate-mcclure-mark-damico-search-warrant-south-jersey-florence-20180906.html>
- [51] Barra, R and Leonard, S.A. 2018. Novel Entities. A STAP Document.
<http://www.stagef.org/novel-entities>
- [52] See: <https://www.bbvaopenmind.com/en/economy/business/how-blockchain-is-revolutionizing-crowdfunding/>
- [53] See: <https://www.comparethecloud.net/articles/how-blockchain-is-revolutionising-the-crowdfunding-landscape/>
- [54] See: <https://www.ibm.com/blogs/blockchain/2019/09/blockchains-potential-to-revolutionize-crowdfunding/>
- [55] Note ? there is a common misconception that Bitcoin (and other cryptocurrencies) and blockchain are one and the same, however this is not the case. The blockchain is an underlying technology behind cryptocurrencies, however blockchain has many uses independent of cryptocurrencies. Cryptocurrencies introduce an additional layer of complexity and risk to projects, and in the case of this project, was deemed to be both unneeded and unsuitable in achieving project goals and outcomes.
- [56] Note that a determination of whether to enhance and use the SeedIT app to serve as the Platform-mobile application under Component 1 or another provider will be made in the PPG stage of the project. The SeedIT app will, at a minimum, support the work under Component 2 to strengthen local tree nurseries, and to track the source and propagation of tree seeds and seedlings using blockchain technology.
- [57] See: <https://infoflr.org/bonn-challenge-barometer>
- [58] See: <http://www.globalforestwatch.org>
- [59] <https://www.ted.com>
- [60] https://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.C.54.19.Rev_03_Replenishment.pdf
- [61] De Groot R, et al. (2013) *Benefits of investing in ecosystem restoration*. Conservation Biology 27:1286-1293.
- [62] ELD Initiative & UNEP (2015). *The Economics of Land Degradation in Africa: Benefits of Action Outweigh the Costs*. Available from www.eld-initiative.org
- [63] Vergara, W., et. al. (2016). *The Economic Case for Landscape Restoration in Latin America*. Available online at: <http://www.wri.org/publication/economic-case-for-restoration-20x20>. World Resources Institute, Washington DC.
- [64] NYDF Assessment Partners. (2019). Protecting and Restoring Forests: A Story of Large Commitments yet Limited Progress. New York Declaration on Forests Five-Year Assessment Report. Climate Focus (coordinator and editor). Accessible at forestdeclaration.org
- [65] *State of Private Investment in Conservation 2016*. Forest Trends, Washington DC. Available: <https://www.forest-trends.org/publications/state-of-private-investment-in-conservation-2016/>

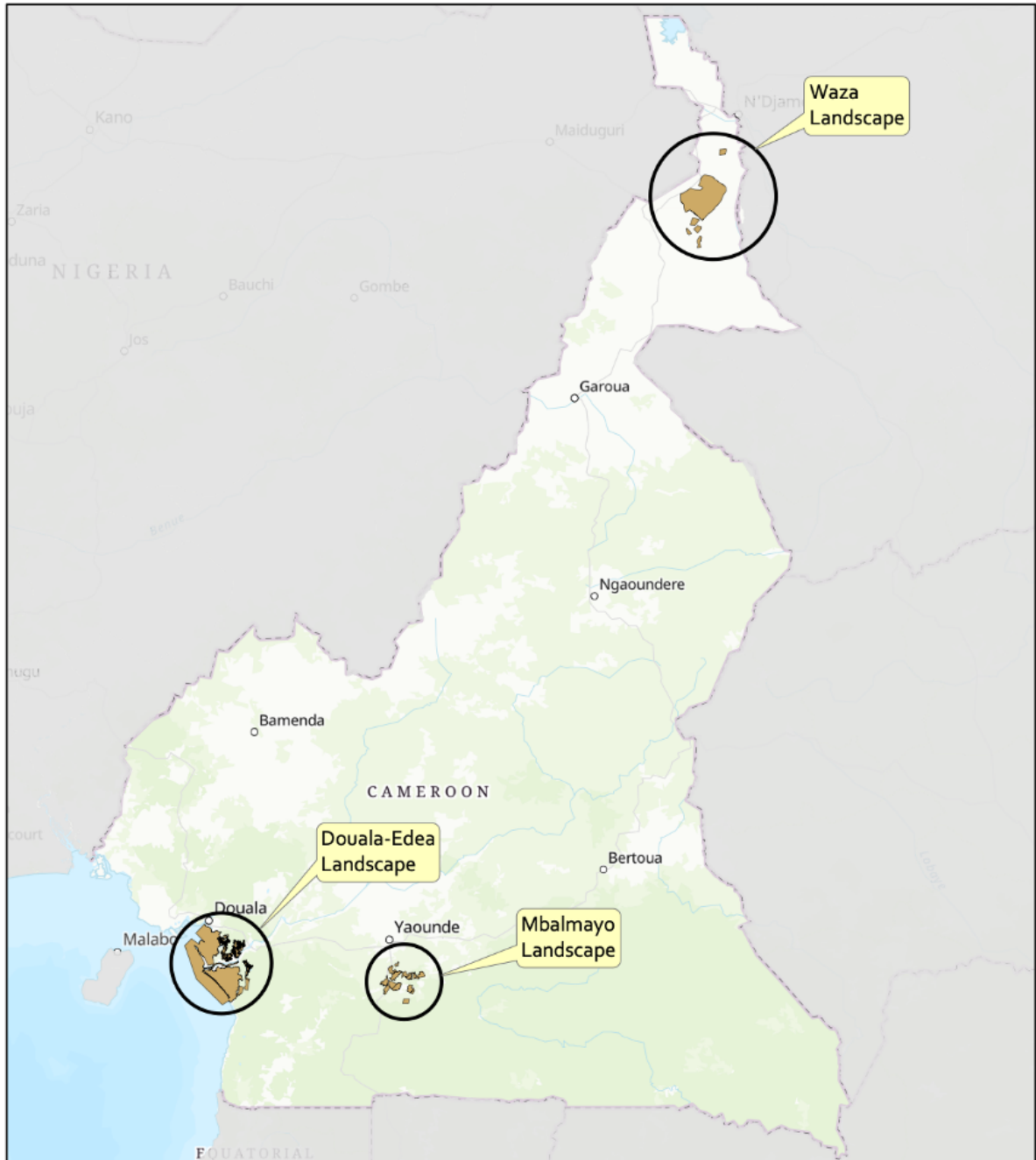
1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

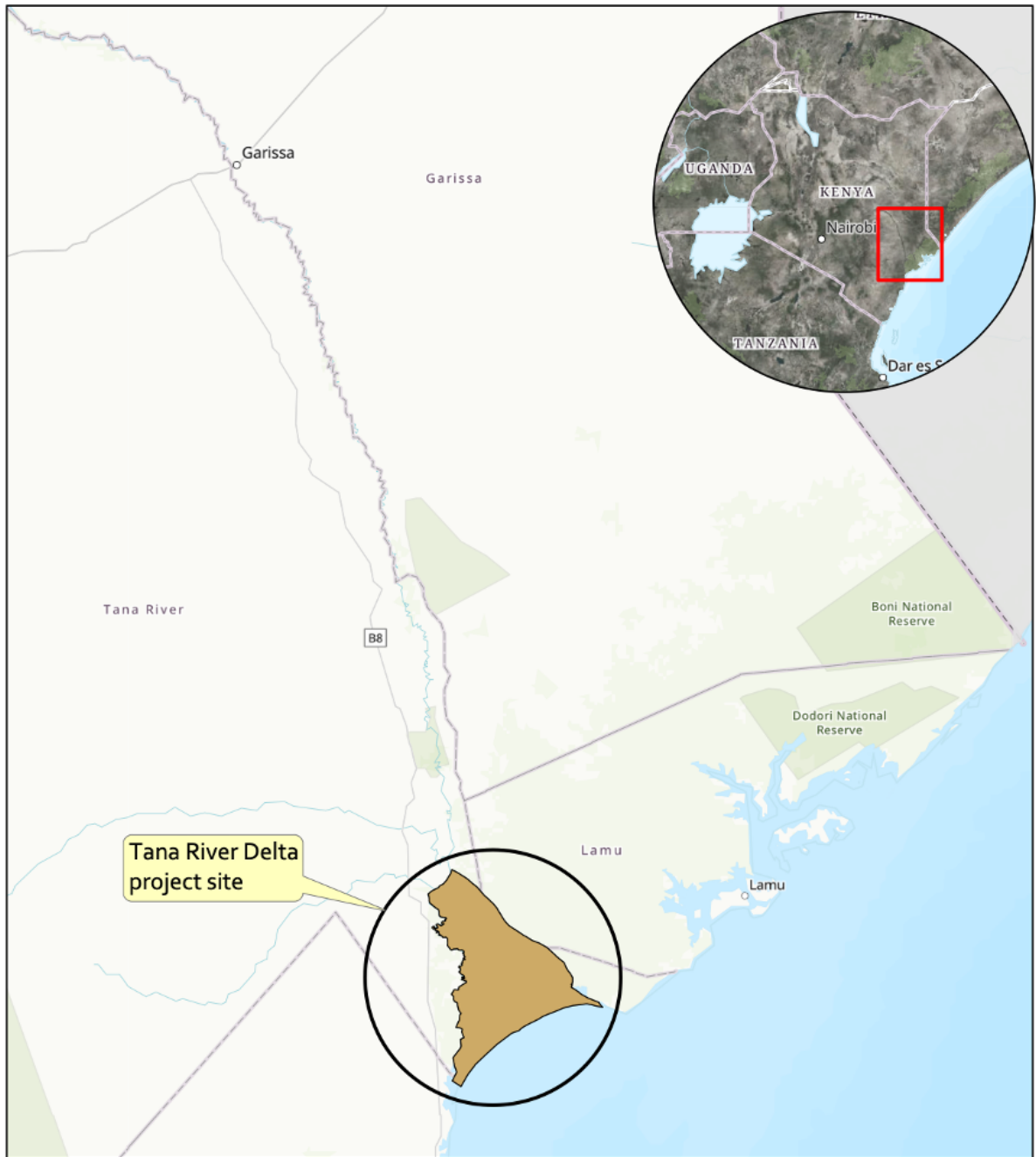
Note ? target landscapes will be identified during PPG stage. Where possible, selected landscapes will be in or near the vicinity of TRI project landscapes for the Platform-partnering countries. The attached maps indicate the location of TRI landscapes



TRI Cameroon Project Sites



TRI Kenya UNEP Project Site

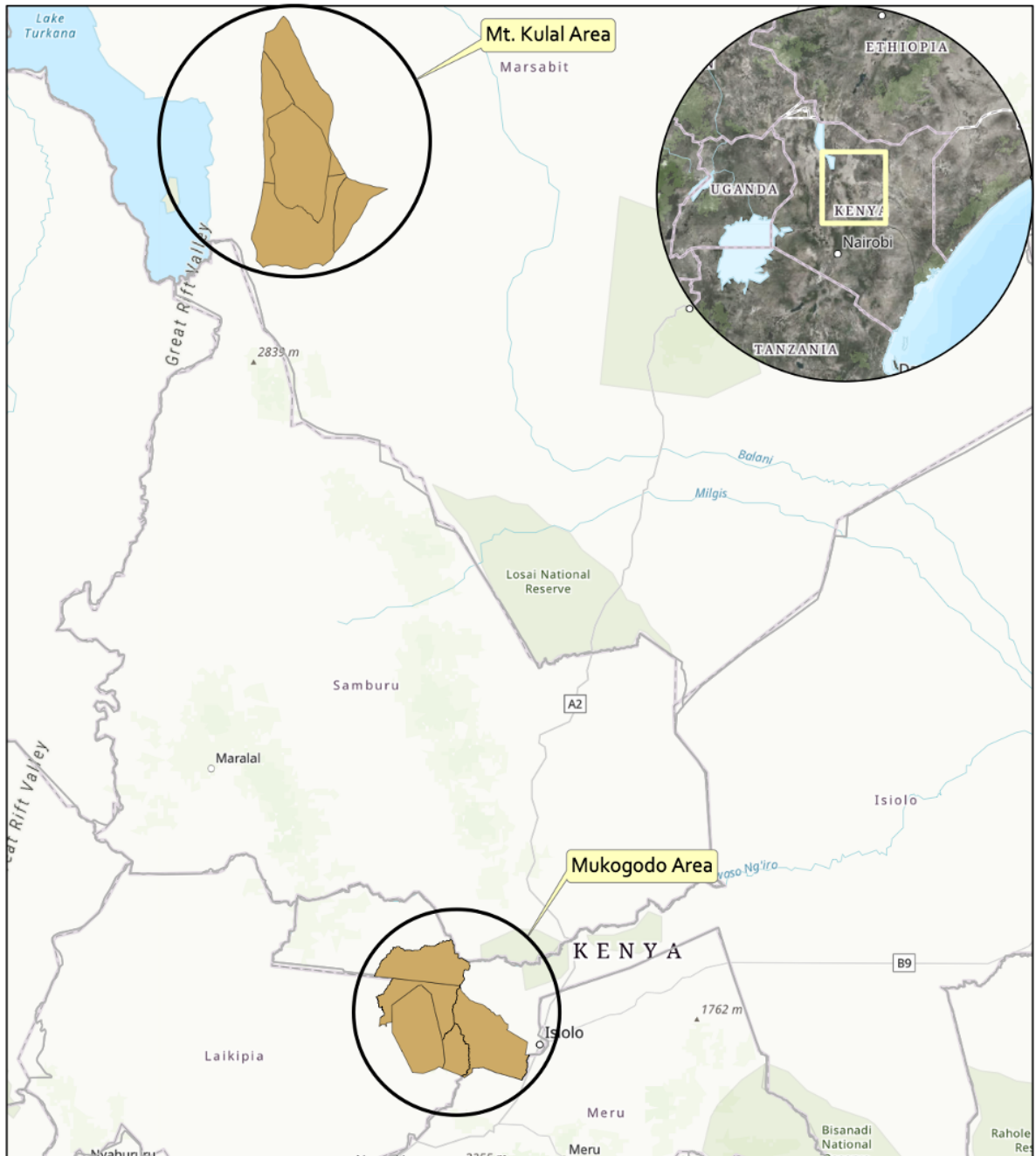


0 20 40 80 Kilometers





TRI Kenya FAO Project Sites





2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Indigenous Peoples and Local Communities Yes

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above, please explain why:

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement.

KEY EXTERNAL EXPERTS CONSULTED IN THE DEVELOPMENT OF THIS PROJECT INCLUDE:

? SHAUN FRANKSEN, CO-FOUNDER OF PLASTIC BANK, A FOR-PROFIT ORGANIZATION THAT HAS, SINCE 2013, OPERATED A RAPIDLY GROWING PLATFORM TO INCENTIVIZE INDIVIDUALS LIVING IN POOR AND RURAL COMMUNITIES TO COLLECT AND RECYCLE PLASTIC WASTE USING MOBILE AND BLOCKCHAIN TECHNOLOGIES.

? DAVE REJESKI, VISITING SCHOLAR AT ENVIRONMENTAL LAW INSTITUTE AND RECOGNIZED EXPERT ON BLOCKCHAIN TECHNOLOGY AND APPLICATIONS. DAVE WAS A PRESENTER AT THE GEF STAP 2019 CONFERENCE ON BLOCKCHAIN.

? MARK ELLIS-JONES, FOUNDER OF SUSTAINIFI, A UK-BASED DEVELOPER OF SUSTAINABILITY ACCOUNTING SOFTWARE FOR LAND MANAGERS AND INVESTORS IN SUSTAINABLE LAND MANAGEMENT.

? JOHN WAINAINA KARANJA, FOUNDER BITHUB.AFRICA ? A KENYAN-BASED DEVELOPER OF BLOCKCHAIN APPLICATIONS. JOHN WAS A PRESENTER AT THE GEF STAP 2019 CONFERENCE ON BLOCKCHAIN.

? DR. HAMAN UNUSA, GEF OPERATIONAL FOCAL POINT FOR CAMEROON, NATIONAL DIRECTOR OF ENVIRONMENT, MINISTRY OF AGRICULTURE AND ENVIRONMENT

? DR. CHRIS KIPTOO, GEF OPERATIONAL FOCAL POINT FOR KENYA, MINISTRY OF ENVIRONMENT AND FORESTRY, OFFICE OF THE PRINCIPAL SECRETARY

A KEY PART OF PROJECT PREPARATION ACTIVITIES WILL INVOLVE IDENTIFICATION OF SUITABLE LANDSCAPES AND LOCALITIES WHERE THE PLATFORM WILL BE ENGAGED. AS THIS PROJECT INTENDS TO DIRECTLY SUPPORT SMALLHOLDERS AND RURAL COMMUNITIES, THEIR PARTICIPATION IN PROJECT PREPARATION ACTIVITIES WILL BE CRITICAL. MEANS OF ENGAGEMENT WILL INCLUDE:

? MEETINGS WITH COMMUNITY LEADERS, LOCAL SCHOOL ADMINISTRATORS, LOCAL CIVIL SOCIETY ORGANIZATIONS EMBEDDED WITH, AND/OR WITH A HISTORY OF WORKING WITH PROSPECTIVE TARGET COMMUNITIES. MEETINGS WILL BE AN OPPORTUNITY TO DISCUSS THE PLATFORM AND ITS OBJECTIVES, AND HEAR DIRECTLY FROM COMMUNITY MEMBERS ON WHETHER AND HOW THE PLATFORM CAN BEST MEET THE NEEDS OF COMMUNITY MEMBERS, AND THE FEASIBILITY OF THE PROPOSED APPROACH

? MEETINGS WITH LOCAL PRIVATE SECTOR ENTITIES WILL INCLUDE OWNERS/OPERATORS OF TREE SEEDLING NURSERIES IN TARGETED LANDSCAPES, TREE SEED SUPPLY ENTITIES, LOCAL CELL-PHONE AND M-PESA OPERATORS AND PROVIDERS, TO DISCUSS THE PLATFORM AND ITS OBJECTIVES, AND HEAR DIRECTLY FROM THESE PRIVATE SECTOR MEMBERS ABOUT THE FEASIBILITY OF THE PROPOSED APPROACH, AND ANY SUGGESTIONS FOR IMPROVEMENTS TO THE PROPOSED APPROACHES.

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

IUCN's Gender Policy Statement of 1998 calls for the promotion of equity and equality as essential to the sustainable use, management, and conservation of natural resources. IUCN and execution partners recognize the need to pay special attention to issues of gender equality and equity in partnering with local communities and in the sharing and distribution of local benefits from Platform-supported work. The project will take the following actions to ensure incorporation into the project's activities:

? For all Platform events such as trainings, workshops and consultations, efforts will be made to ensure active female participation, to the point that, where suitable, an equal distribution of males and females will be invited as presenters and participants. The monitoring of learning activities and participation will also include gender indicators. Doing so improves the likelihood that issues primarily affecting women are adequately represented in the Project's processes.

? The project's results frameworks includes gender-sensitive indicators.

? A gender action plan will be developed in the PPG stage of the Project, including means for ensuring gender equality and equity in partnering with local communities and in the sharing and distribution of local benefits from Platform-supported work. This may include, for example, having female heads of households responsible for receiving and managing Platform-supported restoration and maintenance payments, and, where feasible, ensuring that a balanced number of Community entrepreneurs are male and female.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes

closing gender gaps in access to and control over natural resources; Yes

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women. Yes

Will the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

Private sector engagement will be a key part of the project, as purveyors of key inputs to the project, and as smallholders and Community entrepreneurs who will be directly incentivized to partner with the Platform. Private sector engagement will include the following:

- ? Development of the Platform mobile application and provider of support
- ? M-Pesa system (and other provider in Cameroon) and network of local providers
- ? Local cell-phone service providers and support
- ? Smallholders in targeted landscapes that register with the Platform to become Restoration partners
- ? Community members that register with the Platform to become Community entrepreneurs, providing a number of services for the Platform including outreach and training/capacity building, and facilitation of payments, and provider of other support as needed.
- ? Developer of the public web portal and blockchain-enabled crowd funding system
- ? Crowdfunder investors
- ? Other potential private sector investors including Ecosia and Mastercard's Priceless Planet Coalition.

5. Risks to Achieving Project Objectives

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

Potential risks associated with the achievement of Project objectives, as well as planned mitigation measures included in the Project's design are shown in Table 2 below.

Table 2. Identified risks to project objectives and mitigation measures

Risk	Risk Level	Mitigation Measures
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Risk	Risk Level	Mitigation Measures
Platform mobile application cannot be developed in time or on budget, and/or does not function as planned	Medium	<ul style="list-style-type: none"> - A wide-reaching call for proposals from developers of similar mobile applications will be utilized, supported by PPG-stage outreach and research, to identify a firm with an excellent track record of developing similar applications on-time, and on-budget. - At least one software/mobile phone application already exists (Sustainifi.com) that can be modified to meet the needs of this project, based on conversations with the firm's president and demonstration of platform. To be followed up in the PPG phase. - The project will provide for support of the mobile application to users throughout the life of the project, to address any difficulty in using the Platform mobile application.
Platform-provided phones do not function as planned, and/or are utilized for non-project means.	Medium	<ul style="list-style-type: none"> - PPG-stage work will include assessment of suitable, low-cost phones capable of running the Platform mobile application, and considering local cell and wi-fi coverage. Where phones are provided to <i>Restoration Partners</i> and/or <i>Community Entrepreneurs</i>, the project will employ dedicated technical support to address any issues that arise with operation of either the phones or the Platform mobile application. As noted above under Output 1.2, a "rule book" covering the incentive programme and use of Platform-provided phones will be developed for Project participants during the PPG phase, outlining a transparent 3-strike policy to build trust.
A significant number of project partners make fraudulent claims through false or misleading uploaded photos	Medium - low	<ul style="list-style-type: none"> - To ensure the accuracy the mobile photo-verification system and to guard against possible misuse and/or fraudulent claims, field auditing/verification of a random sample of uploaded photos covering 5-10% transactions (TBD in PPG stage) will occur. This will be complimented by cross checking records of all seedlings provided to <i>Restoration partners</i> and/or <i>Community entrepreneurs</i>. The Rule book and training will include clear rules defining any misuse of the Platform application, incentive program, and Platform-provided phones, and consequences for misuse.
Smallholders and community members in target landscapes are not sufficiently motivated to partner with the Platform	Low	<ul style="list-style-type: none"> - A key part of PPG-stage work will be focused on identifying suitable landscapes and communities where the Platform will engage, including meetings with community leaders, local schools, local civil society organizations, and community members themselves, to hear directly from stakeholders on whether and how the Platform's incentive payments, support, and approach is both adequate and feasible, and likely to attract sufficient interest and participation. - As described above under Output 2.1 the project will undertake and extensive and continuous awareness-raising program to recruit Restoration Partners, including door-to-door canvassing by Community entrepreneurs.

Risk	Risk Level	Mitigation Measures
<p>Insecure or contested land tenure at or near targeted restoration sites undermines restoration work and/or causes conflict among partnering communities</p>	<p>Low</p>	<p>- ESMS screening of potential restoration sites during the PPG stage using IUCN screening protocols will ensure selection of sites and partner communities where the following conditions are present: (a) clear and uncontested land tenure; (b) clear access rights to the timber and non-timber forest products generated by restoration; and (c) where Platform-supported restoration is not anticipated to exacerbate inequality in partners communities.</p>
<p>Blockchain-enabled public-facing web platform fails to attract crowdfunding at anticipated levels</p>	<p>Medium-high</p>	<p>- Attracting crowdfunded investment in Platform restoration work at anticipated or higher levels is dependent upon a number of factors: (a) existence of a sufficient pool of investors whose investment preferences are well-aligned with the Platform’s investment opportunities; (b) ability of the project to reach these investors and make them aware of the Platform’s investment opportunities; (c) ability of the Platform to engender sufficient trust among potential investors on the honesty and integrity of the investment opportunity; (d) ability of the Platform to deliver on crowd-funded investments.</p> <p>- To address the above needs, the project will:</p> <p>? Identify the investment fora, aligned platforms, events, where initiatives with similar opportunities (e.g., tree planting initiatives) have found success in attracting investment. This would include the Trillion Tree Campaign) TerraMatch, Priceless Planet Coalition platform and others.</p> <p>? Develop a targeted awareness-raising and engagement strategy to reach potential investors, as described in Output 4.2.</p> <p>? A key reason for using Blockchain technology is that its transparent ledger and innate qualities preventing manipulation and fraud will help engender trust in the Platform investment opportunities. The web platform will make this transaction ledger publicly available (with the identify of investors hidden), and IUCN and other project partners will stand by the integrity of the investment opportunities.</p> <p>? The Blockchain-enabled investment platform will be developed in Year 2, after the Platform has developed and executed the core elements of the Platform, including the Platform mobile application, community engagement, and has a successful body of initial work to showcase on the public-facing web portal.</p>
<p>Current and future climate change impacts threaten the sustainability of restoration investments</p>	<p>Medium-low</p>	<p>- Selection of landscapes and appropriate tree species will be done factoring in anticipated impacts from climate change under different warming scenarios. Bioersivity International already integrates these assessments in the two tools that will be utilized in the execution of this project and that support identification and use of appropriate tree species and genetic stock: the <i>Diversity for Restoration (D4R)</i> and SeedIt tools (https://seedit.io) discussed in the Baseline section above.</p>

Risk	Risk Level	Mitigation Measures
The present Covid-19 pandemic affects the ability to develop and launch the project in a timely manner	Medium-low	- The Covid-19 pandemic requires that appropriate actions be taken to reduce the risk of contracting and spreading the virus among all who work on and interact with the Platform. Activities that can be done remotely, such as procuring a software developer and developing the mobile application, and other preparatory and operational work, will be done in this manner. Where activities require field presence, all recommended precautions will be utilized. Implementation and execution partners will continue to monitor the situation closely and adapt as events change and dictate.

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

IUCN will serve as the GEF Implementing Agency for this project. Staff in from IUCN's regional offices in Nairobi, Kenya, and Yaounde in Cameroon, together with staff in IUCN Headquarters in Switzerland and Washington DC, will provide oversight and technical support to ensure proper use of GEF resources, adherence to environmental and social safeguards, and all regular and required reporting. In addition, as lead Agency for the TRI programme, IUCN will help coordinate and integrate Platform and TRI work, both at the national level with TRI partners FAO, UN Environment, INBAR, and Nature Kenya, and at the global programmatic level, including through use of TRI infrastructure, workshops, and other events. Links with TRI will support awareness-raising within target communities of the Platform incentive program and best-practices in restoration, as well as integration with TRI-supported restoration work in Cameroon and Kenya (TBD in PPG stage).

The project will be executed by Bioversity International which has ongoing work and projects in both Cameroon and Kenya. A dedicated Project manager, along with other technical and administrative support members will constitute the Project Management Unit (PMU), responsible for direct day-to-day execution of project activities and delivery of all project outputs according to approved work plans and budget (see below). Local offices supporting members of the PMU will be established in each participating country (space will likely be rented in existing partner offices ? TBD in PPG stage). Technical support for all aspects of the Platform application and network of Platform-provided phones will be provided through dedicated PMU staff.

To support oversight, adaptive management, and coordination, integration and partnership with in-county aligned programs and work, a Project Steering Committee (PSC) will be constituted at the beginning of the project. Supported by the Project Management Unit and convened on a quarterly basis (at least twice yearly in-person), the PSC will include relevant representatives from IUCN, Bioversity, the GEF, and Kenya and Cameroon government partners. All decisions of the PSC will be made via consensus. Among other duties, the PSC will review and approve all quarterly work plans and budgets.

At the local-landscape level, the project will involve the following partners:

? *Restoration partners* ? These are the smallholder farmers, pastoralists, and community members in target landscapes who upon learning about the Platform incentive programme, choose to register with the Platform, receive training on the use the Platform application, and undertake Platform-supported restoration work. As noted above, to ensure wide access to the Platform, low-cost cellphones with pre-paid cellular plans and technical support may be provided to a select number of Restoration partners in cases where use of privately-owned cell phones is not an option (TBD in PPG stage).

? *Community Entrepreneurs* ? To increase the reach of the Platform, the Platform will partner with and train Community Entrepreneurs. These community members will help in spreading awareness of the Platform incentive programme, including through use of workshops and door-to-door canvassing. Community Entrepreneurs will also support training of Restoration Partners in the use of the Platform application and best practices for restoration, and engagement and work with local nurseries as needed. In cases where Restoration partners lack privately-owned phones capable of running the Platform mobile application and where it is not feasible to provide phones directly to Restoration partners, Community Entrepreneurs will facilitate payments to those Restoration partners using their own phones or Platform-provided phones (TBD in PPG phase). Other services potentially provided by Community Entrepreneurs include follow-up verification of a select number of restoration plots in each community and support for follow-up maintenance.

? *Nurseries* ? Nurseries able to provide an adequate supply of tree seedling of suitable species, genetic stock, and quality in target landscapes will be key to the success of this project. Criteria to identify suitable landscapes (in PPG stage) will include presence or absence of suitable nurseries. In addition, work under Component 2, Outcome 2.3 includes support to strengthen the capacity of local nurseries and integrate them into Platform-supported restoration work. To help reinforce training on best practices for planting and maintenance of tree seedlings, partnering tree nurseries will be trained on providing simple, species-specific guidance to Restoration partners at point-of-transaction (pickup or delivery of seedlings).

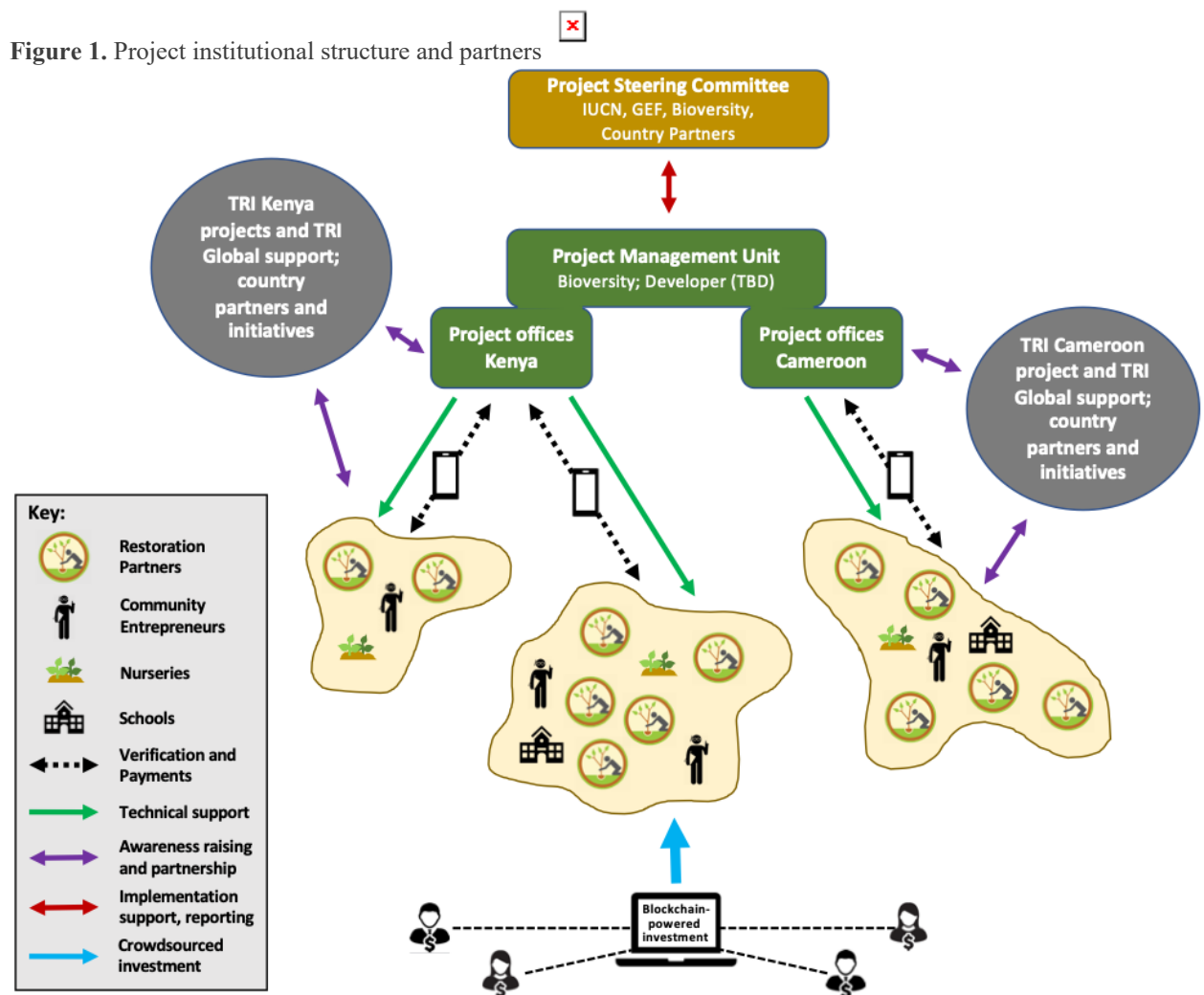
? *Schools* ? It is anticipated that some of the Platform-supported restoration work in targeted landscapes will be undertaken by local schools, to support youth-engagement and learning. Lead partners at schools responsible for facilitating this work would likely include school administrator(s) or teacher(s) (TBD in PPG phase). In other respects, partnering schools function as Restoration partners, registered and trained on the programme and use of the application, and with incentive payments provided directly through the mobile application.

As described above, the Platform mobile application and back-end software will play an important role in monitoring, evaluation, and coordination of Platform-supported restoration. This includes registration of all Restoration partners, schools, and Community Entrepreneurs; tracking of all supported restoration work via geo-referenced and time-stamped uploaded photos; and tracking of all payments for approved (via review of photos) restoration work and follow-on maintenance. Records of all seedlings provided to Restoration partners and/or Community entrepreneurs will be maintained and matched with uploaded restoration photos during the verification process. In addition, in-person verification of a random sample of restoration work will occur at different intervals in the project (TBD), to assess the accuracy of the photo-verification system, and make any needed adjustments to the approach.

The project will also explore use of satellite imagery and geospatial tools to further track and monitor results of the Platform-facilitated restoration. Active assessment of TRI landscapes in Kenya (both projects) and Cameroon is occurring under TRI-supported work to pilot a new tool ? the Species Threat Abatement and Recovery (STAR) metric. While STAR focuses on threatened species and quality/degradation of habitat, it is likely that this monitoring system can be utilized to support monitoring of Platform-supported restoration (TBD in PPG stage).

Phase II of the project will develop a public-facing web portal powered by blockchain technology to facilitate mobilization of crowd-funding for the smallholder and community-led restoration work of the Platform. Crowdsourced payments will be linked via the blockchain ledger to individual trees planted (including coordinates of planted trees), and communities (potentially down to the level of individual smallholder pending privacy concerns). This will ensure that payments are non-duplicative. Moreover, payments will only be tendered (charged) when promised conditions have been met (here, verified planting of trees, facilitated by linkage to the Platform mobile application verification process).

Figure 1 below provides an overview of the project's institutional structure and partners.



7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions?

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

The Platform's objectives are consistent with the strategies and policies of the partnering countries to address and promote forest landscape restoration and improve the livelihoods and well being of poorer and rural communities. In addition, both Kenya and Cameroon are participating in the GEF-6 The Restoration Initiative programme (TRI), that shares the aligned and overall objective to contribute to the restoration and maintenance of critical landscapes to provide global environmental benefits and enhanced economic development and livelihoods, in support of the Bonn Challenge.

Relevant policy and strategy frameworks demonstrating alignment with Platform objectives include:

Cameroon:

? In February 2017, the government of Cameroon committed to restoring 12.06 million ha of degraded lands, as a contribution to the Bonn Challenge and AFR 100 restoration initiatives.

? The *National Action Plan for the Fight against Desertification 2014-2015* identifies four priority interventions needed to halt land degradation: i) the promotion of sustainable management and use of land; ii) improvement and maintenance of vegetation cover; iii) integration of income generating activities to the protection of the environment; and iv) capacity building of all stakeholders. The Platform will contribute to the identified priorities through work with Smallholders and Communities to incentivize and facilitate restoration.

? in 2017, Cameroon launched the national chapter of the Great Green Wall for its northern regions and the national campaign of reforestation in May 2018, with a target of 556,100 trees to be planted all over the country^[1].

? Cameroon's Forest Law of 1999 identifies Forest Landscape Restoration as an objective, with reforestation and artificial regeneration identified as two interventions to be conducted in the permanent forest estate, and recognizes individual and group efforts in establishing forests. The National Forestry Development Agency is mandated with implementing the law and in particular to support the development of a national private and community forest plantations program. In 2006 the government set a target of planting at least 1 million seedlings a year and to provide required funding to councils, communities and associations for this reforestation campaign.

Kenya:

? In September 2016, the government of Kenya committed to restoring 5.1 million ha of degraded lands, as a contribution to the Bonn Challenge and AFR 100 restoration initiatives.

? Kenya's *1st National Communication* from 2002 (<https://unfccc.int/resource/docs/natc/kennc1.pdf>) identified mitigation options include conversion of marginal agricultural land to grassland, forest or

wetland to increase carbon sequestration and decrease land degradation, and reforestation of degraded lands.

? Identified mitigation actions in Kenya's 2010 National Climate Change Response Strategy (https://cdkn.org/wp-content/uploads/2012/04/National-Climate-Change-Response-Strategy_April-2010.pdf) include rehabilitation and restoration of all degraded forests and riverine vegetation with afforestation/reforestation over 4.1 Mha. These efforts are also part of the greater goal to increase forest cover to 10% by 2030 as part of Kenya's Vision 2030.

[1] Chemete, P. 07 May 2018. Lutte contre les changements climatiques: 600 millions de FCFA pour le reboisement. Cameroon Tribune Daily.

8. Knowledge Management

Outline the knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

Effective capture and dissemination of project experiences and best practices to inform, further support, and scale up restoration efforts going forward is a key focus of the project, and comprises all activities under Component 3.

A knowledge capture and learning strategy will be developed during the PPG stage of the project, clearly delineating the means for monitoring, evaluating, and sharing Platform experiences to be impactful. All knowledge materials developed through project support will be made available free of charge over relevant partner platforms, including the websites and related knowledge portals of IUCN, Bioversity International, the GEF, partnering governments, and other relevant and mission-aligned organizations.

As noted above, areas for inquiry, around which the Platform learning strategy will be designed to address, would include the following:

- ? Best practices for engaging smallholder and rural communities in restoration, including building awareness, support and capacity for restoration, and considering socio-economic, cultural, and environmental factors.
- ? Best practices in use of cellular mobile technology for incentivizing smallholder and rural communities in restoration, and considering socio-economic, cultural, and environmental factors.
- ? The effectiveness of smallholder- and rural community-led restoration, considering factors such as landscape, degradation, tree species, follow-on maintenance and care, and more.
- ? Best practices in utilizing blockchain technology and other tools for mobilizing crowd-sourced funding of smallholder- and rural community-led restoration
- ? Best practices in addressing gaps in the supply of tree seedlings of suitable species and genetic stock to meet local demand and restoration needs, considering market and other socio-economic factors.

Key knowledge products to be developed and disseminated by the Platform include:

? 1 case study per targeted landscape that considers the particular socio-economic, cultural, environmental factors, and Platform-supported activities that together are likely to have played a role in the effectiveness of supported restoration work. Inputs to case studies will include household surveys of *Restoration partners* and *Community entrepreneurs*, as well as other community members. Case studies will also take advantage of the wealth of data collected by the Platform mobile app and Platform-provided cellular phones.

? 1 Consolidated Report, based upon developed and included case studies, and that also covers the Phase II scale up using blockchain technology to mobilize crowd-sourced funding for smallholder- and rural community-led restoration, will be developed. Along with a synthesized review of Platform experiences, the Consolidated Report will provide recommendations to help inform restoration efforts going forward.

As this project is engaged in an area ? restoration, and mobilization of rural smallholders and communities - that is the subject of special focus, inquiry and engagement by a number of partners, many of whom are identified in the Baseline section above, IUCN, Bioversity, and other project partners will work to ensure that new and relevant information that emerges over the implementation period is incorporated into the project?s intervention approach, as appropriate. In addition to relevant professional communities, initiatives and fora, the project?s Project Steering Committee (PSC) will play an important role in highlighting emerging opportunities for adaptive management and capture of synergies through, among other means, partnership with relevant emerging projects and initiatives.

9. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification *

PIF	CEO Endorsement/Approval	MTR	TE
Low			

Measures to address identified risks and impacts

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

Overall, project presents low risks in terms of environmental and social concerns. Among these, the risk that project benefits will be distributed in an unequal way or exacerbate existing inequities in partnering communities is the principal concern. PPG-stage work to identify suitable sites and communities to partner with will need to be cognizant of these risks, including gender concerns, marginalized communities, and inequalities within partner communities, and assess what if any measures need to be taken to ensure that project opportunities and benefits are distributed equally.

Supporting Documents

Upload available ESS supporting documents.

Title	Submitted
ESMS Preliminary Screening	

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And GEF Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Dr. Haman Unusa	Unit Head for Studies and Prospection	MINISTRY OF ENVIRONMENT, PROTECTION OF NATURE AND SUSTAINABLE DEVELOPMENT, Cameroon	5/18/2020
Dr. Chris Kiptoo	Principal Secretary, GEF Operational Focal Point	MINISTRY OF ENVIRONMENT AND FORESTRY, KENYA	4/27/2020

ANNEX A: Project Map and Geographic Coordinates

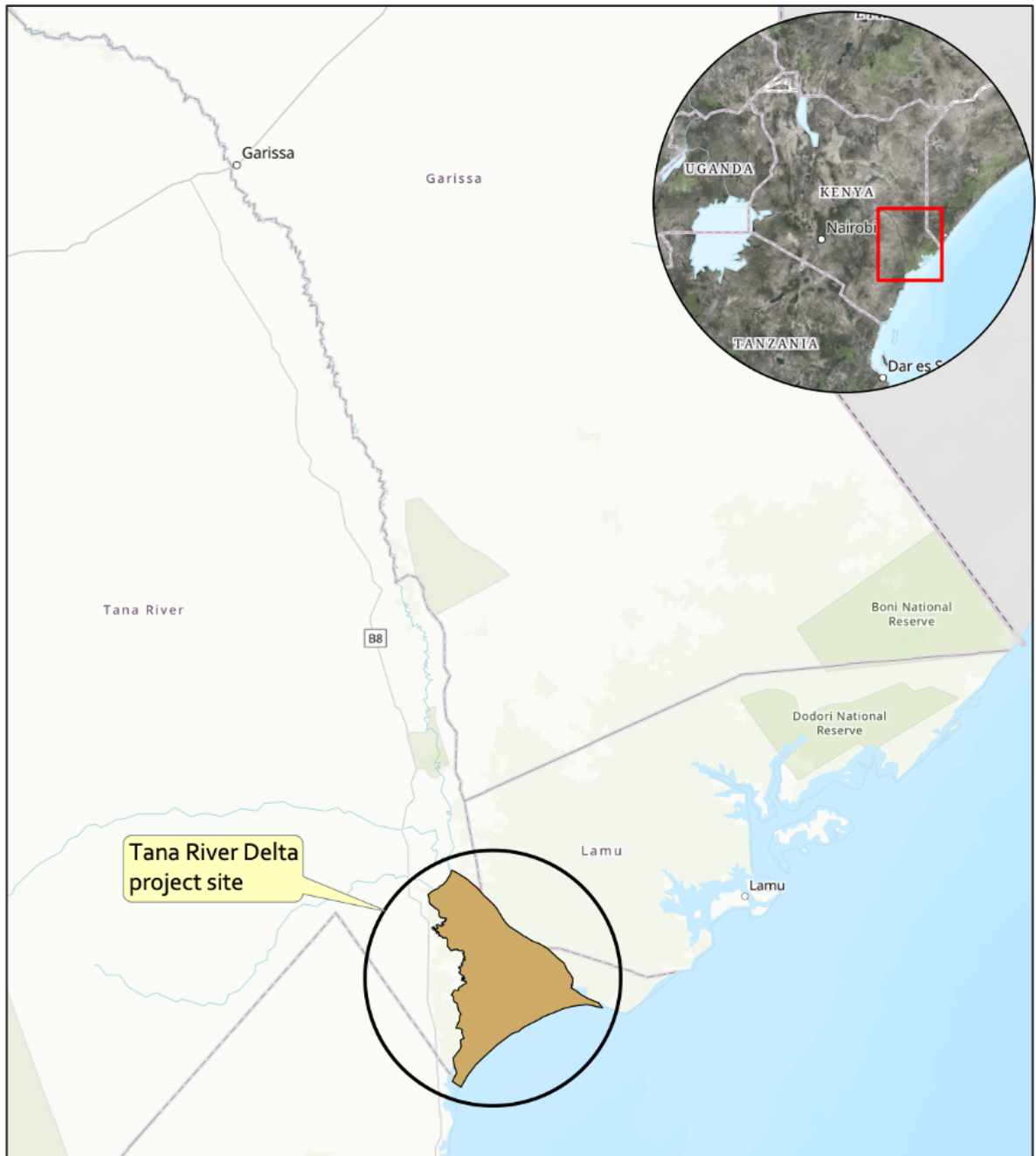
Please provide geo-referenced information and map where the project intervention takes place

Note ? target landscapes will be identified during PPG stage. Where possible, selected landscapes will be in or near the vicinity of TRI project landscapes for the Platform-partnering countries. The attached maps indicate the location of TRI landscapes.





TRI Kenya UNEP Project Site



0 20 40 80 Kilometers





TRI Kenya FAO Project Sites

