SCF

SUBNATIONAL CLIMATE FUND

Technical Assistance Report 2021-2024

PEGASUS 25 YEARS | IUCN | Catalytic Finance Foundation | Gold Standard

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Executive Summary

The Subnational Climate Fund (SCF) is a blended finance initiative launched in 2021 with the goal **to invest in and scale mid-sized climate resilient, low-carbon infrastructure in emerging markets and developing countries** with the objective to:

- mitigate climate change and strengthen adaptive capacities (SDG 13)
- improve livelihoods and enhance prosperity in emerging markets and developing countries (SDG 8)
- transform lives in local economies and promote inclusion by promoting women's economic empowerment (SDG 11 & 5)

70% of solutions to climate change need implementation at the subnational level

but conventional climate finance has failed to catalyze the potential of mid-scale climate investments.

At least 105 of the 169 targets underlying the 17 SDGs

will not be reached without subnational governments[1]

[1] OECD A territorial approach to the SDGs (2019); UNDP A territorial approach to the Climate Change (2012)

Picture: GAEA, Cambodia

Forewords

I am honored to reflect on the pivotal role that the Catalytic Finance Foundation has played in advancing climate action at the subnational level through the SCF. In a world where climate challenges are increasingly urgent, our mission to accelerate sustainable development through innovative financing solutions has never been more critical.

The SCF represents a groundbreaking approach to climate finance, addressing the need for localized solutions that can drive global impact. As a key partner, Catalytic Finance Foundation has been instrumental in sourcing projects that align with the SCF's goals and providing the essential technical assistance required to bring these projects from concept to implementation. Our work ensures that each project is not only financially viable but also capable of delivering tangible environmental and social benefits.

Over the past year, our collaboration with Pegasus, Gold Standard and IUCN has allowed us to identify and support more than 30 projects that tackle critical issues such as renewable energy, sustainable agriculture, and ecosystem restoration. These initiatives are more than just investments; they are commitments to building resilient communities and fostering a sustainable future.

I would like to extend my deepest gratitude to our partners, stakeholders, and the dedicated teams who have made this progress possible. Together, we are not only addressing the urgent climate crisis but also laying the foundation for a more sustainable world. The journey ahead is challenging, but with continued collaboration, I am confident that we will achieve our shared vision.

Sincerely,

David Albertani |Chief Executive Officer
Catalytic Finance Foundation

At Gold Standard, our mission has always been to ensure that climate finance not only promises change but delivers it—tangibly and measurably. Through the Subnational Climate Fund (SCF), we have expanded this mission, pioneering new strategies on climate adaptation and nature-based solutions that empower fund managers to unlock the full social, environmental, and economic potential of their investments.

In our role within the SCF, we have been at the forefront of creating and implementing rigorous sustainable development standards and methodologies that bridge the gap between investment decisions and real-world outcomes. Over the past year, our efforts have concentrated on bolstering the capacity of fund managers by providing them with tailored tools for each critical decision-making stage. Our goal has been clear: to ensure that every dollar invested not only contributes to climate change mitigation but also supports global Sustainable Development Goals (SDGs).

By embedding best practices in project impact assessment, measurement, and verification, we are setting a benchmark for the industry. Our work ensures that projects supported by SCF align seamlessly with global climate objectives while fostering the well-being of people and the planet.

This journey is about more than just meeting existing SDG targets; it's about redefining what climate finance can achieve. The innovative approaches we co-developed with the SCF are not just impactful—they are designed to be scalable and replicable, setting a precedent for widespread adoption across the sector.

I am immensely proud of what we've accomplished and am optimistic that the foundations laid will catalyse an even greater impact in the years to come.

Sincerely,

Margaret Kim |Chief Executive Officer
Gold Standard

Since 2021, the SCF has already surpassed most of its mid-term targets with the viability and long-term sustainability of 35 projects in 21 countries, while building the capacity of over 280 local stakeholders. It is therefore with a sense of satisfaction that I reflect on the substantive progress of the first three and a half years of the SCF.

The SCF addresses major gaps in international climate finance using blended finance approaches. With support from the Green Climate Fund, SCF is comprised of two separately implemented and independently managed components that cooperate around a common goal: helping sub-national jurisdictions to mobilize $750 million in investment for projects in the fields of sustainable energy, waste and sanitation, regenerative agriculture and nature-based solutions in developing countries.

IUCN is proud to be the implementation agency the technical assistance component and leading the capacity-building. With training programs, technical support, and the sharing of best practices, we have begun to create a robust framework to support local actors in the design of projects that restore ecosystems, enhance resilience, and deliver long-term benefits to people and nature alike.

In working toward these goals SCF TA has so far organized 3 regional workshops and 2 tailored national trainings across Latin America, Africa and Asia-Pacific, reaching more than 280 representatives of subnational and national governments, project developers and financial institutions. It has also provided technical support to the screening of technical assistance grants of 35 projects.

Capacity building is not a mere add-on; for the SCF it is the foundation for success of sustainable climate infrastructure projects, empowering all actors with the knowledge and tools needed to move their projects to the next stage. While the “financing gap” is regularly cited as a bottleneck to accelerated climate action, another is often overlooked: the “knowledge and capacity gap”. Addressing both concurrently has demonstrated transformative power for the future.

I am confident that continued, combined efforts will pave the way to more resilient communities and a healthier planet.

Sincerely,

Stewart Maginnis
Deputy Director General (Programme) | IUCN

The SCF is more than just a financial instrument; it aims to be a catalyst for sustainable development at the local level. A key component of its success is the Technical Assistance Facility that is provided to (potential) SCF investments, which plays a crucial role in ensuring that the projects we fund are not only impactful but also meticulously designed and effectively implemented to generate environmental and social benefits alongside financial returns.

The Technical Assistance Facility attached to the SCF has been instrumental in delivering the necessary expertise to develop robust, scalable, and sustainable solutions. This facility bridges the gap between vision and execution, offering targeted support to project developers and companies in the form of feasibility studies, capacity building, and support to enhance environmental and social outcomes as well as stakeholder inclusivity. By combining financial resources with technical guidance, our intention is that each project is equipped to deliver maximum benefits to the communities it serves.

This integrated approach sets the SCF apart, enabling us to de-risk investments and enhance the long-term sustainability of the projects and companies we support. The Gold Standard impact fund certification further helps to assure that impacts are achieved in the real economy. It is a model that not only addresses immediate climate challenges but also builds resilience and capacity for future generations.

As we reflect on the achievements of the past year, I am inspired by the potential of this unique partnership. The Technical Assistance Facility has proven to be a cornerstone of our efforts, and I look forward to continuing this journey with all of our partners toward a more sustainable and equitable world.

Sincerely,

Craig Cogut | Founder
Pegasus Capital Advisors

Picture: Agroforestry, Brazil

Introduction

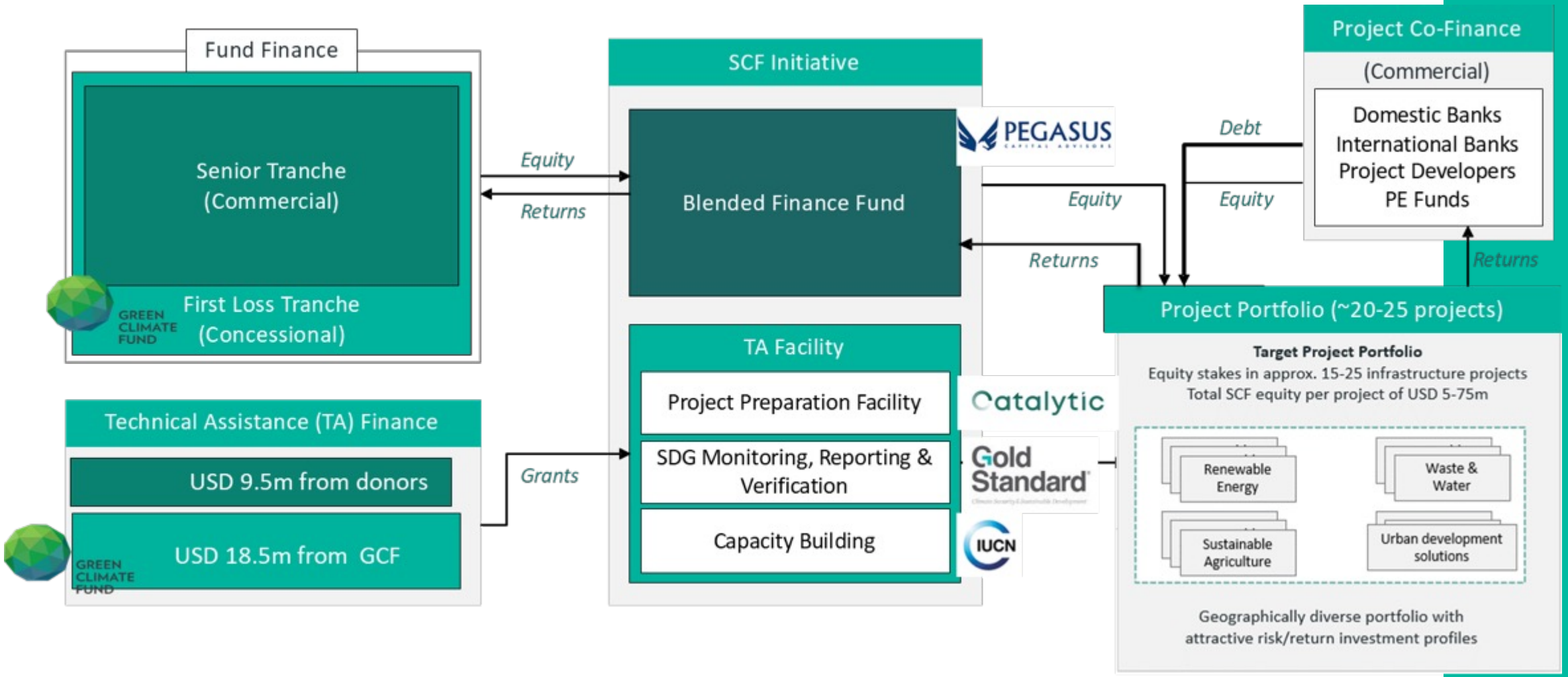
The Subnational Climate Fund (SCF) is a global blended finance initiative that aims to invest in and scale mid-sized (5 – 75 M $USD) subnational infrastructure projects in the fields of **renewable energy, waste & water management, sustainable agriculture and urban development solutions** in emerging markets & developing countries.

SCF consists of :

- **An investment fund** of mid-sized infrastructure projects (SCF Fund) managed by Pegasus Capital Advisors. The Green Climate Fund (GCF) committed up to $150 million to the Investment Fund for a junior tranche which is intended to further de-risk investment and help mobilize additional public and private capital that have limited access to opportunities with attractive risk-reward profiles in developing countries. The total size of the fund is expected to be USD 750 million.

- **A USD 28 million grant-funded facility for technical assistance** (SCF TA). The GCF committed USD 18.5 million to the SCF TA and the remaining USD 9.5 millions should come from co-financers. It operates as a grant-based instrument that responds to sub-national demands for capacity building and bespoke technical support; supporting local stakeholders to develop bankable, sustainable climate project proposals and enabling the development of necessary metrics, tools, and indicators for the identification and monitoring of sustainable investment opportunities.

The following report only covers the technical assistance. A separate report covering the fund will be published by Pegasus Capital Advisors.


Fund Finance
Senior Tranche (Commercial)
First Loss Tranche (Concessional)
GREEN CLIMATE FUND
Equity
Returns
SCF Initiative
Blended Finance Fund
PEGASUS
Project Co-Finance
(Commercial)
Domestic Banks
International Banks
Project Developers
PE Funds
Debt
Equity
Equity
Returns
Returns
Project Portfolio (~20-25 projects)
Target Project Portfolio
Equity stakes in approx. 15-25 infrastructure projects
Total SCF equity per project of USD 5-75m
Renewable Energy
Waste & Water
Sustainable Agriculture
Urban development solutions
Geographically diverse portfolio with attractive risk/return investment profiles
Technical Assistance (TA) Finance
USD 9.5m from donors
USD 18.5m from GCF
GREEN CLIMATE FUND
Grants
TA Facility
Project Preparation Facility
SDG Monitoring, Reporting & Verification
Capacity Building
Catalytic
Gold Standard
IUCN

The SCF was launched in 2021 to address the multifaceted challenges of climate change and promote sustainable development at subnational levels. By focusing on localized mitigation and adaptation needs, the SCF was created to deliver tailored and effective interventions that consider the unique contexts of diverse regions we can invest in.

The SCF's primary objective is to **reduce greenhouse gas (GHG)** emissions, which contribute significantly to global warming, specifically: Carbon dioxide emissions predominantly arising from energy production, transportation, and industrial processes and Methane emissions mainly associated with agriculture, waste management, and energy production. SCF is also dedicated to **improve livelihoods** and enhance prosperity in emerging markets and developing countries (SDG 8) as well as to transform lives in local economies and promote inclusion by **promoting women's economic empowerment** (SDG 11 & 5)

3.5 years later, SCF has provided technical assistance to more than 30 different projects in 21 countries.

THE CHALLENGE

50%

carbon emissions need to be reduced by 2030 and to net-zero by 2050[1]

90%

of waste in LICs is either disposed in unregulated dumps or openly burned, causing serious health and climate consequences[2]

37%

can be contributed through nature-based solutions to to mitigate climate change and meet the Paris climate goal[3]

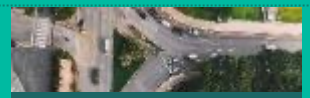
THE OPPORTUNITY

Renewable Energy

- Solar photovoltaic farms
- Energy storage solutions
- Wind parks
- Biomass power plants
- Energy efficiency solutions

Waste & Water Management

- Waste sorting, treatment, recycling facilities
- Composting facilities
- Proven conversion technologies
- Water & Sanitation



Urban Development Solutions

- Climate infra and urban transport
- Digital infrastructure
- Smart city development
- Sustainable tourism infrastructure

Sustainable Agriculture

- Sustainable high value crop agriculture
- Integrated food and agri value chains
- Agriculture technology or agritech
- Controlled environment agriculture

TARGET IMPACT

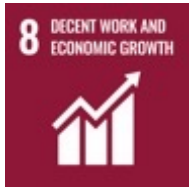
- Enable access to clean and affordable energy
- Reduce CO_2 emissions
- Create local jobs
- Support education and economic growth through reliable electricity

- Provide access to clean water
- Combat domestic and ambient pollution
- Support a circular economy and sustainable use of resources
- Improve health and well-being

- Sustainably manage, and restore natural and modified ecosystems
- Provide human well-being and biodiversity benefits

SCF IMPACT OBJECTIVES

1.8bn
KWh/y RE production



20,000
4.000 for women
direct jobs created

17m
citizens with improved living conditions

82m
t CO2 eq. reduction

There can be no guaranty that the impact objectives will be achieved. Objectives are included for illustrative purposes only. There can be no guarantee that the target return will be achieved. Actual results may vary significantly. Please see the slides entitled "Notice to Recipients" for additional information, including use of objective performance and forward-looking statements.

[1]IPCC: Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development (2019)

[2]World Bank Solid Waste Management (2019)

[3]IUCN Nature-based Solutions (2020)

A unique consortium of experienced partners unified to bring excellence and assurance in origination, delivery, and impact of projects. is behind the success of the SCF

Fund Manager	**Pegasus Capital Advisors.** L.P. is a leading global private markets impact investment manager. Pegasus Capital is dedicated to fostering sustainable and inclusive growth while providing attractive returns for investors. As the first North American private equity firm accredited by the Green Climate Fund, Pegasus Capital is the investment manager of the Subnational Climate Fund and the Global Fund for Coral Reefs.
Technical Assistance Manager	**International Union for Conservation of Nature (IUCN)** is a membership Union composed of both government and civil society organisations. Accredited at the GCF, IUCN is responsible for the Technical Assistance component of the SCF. IUCN is a pioneer in developing Nature-based Solutions projects, and its high standards on environmental and social safeguards.
Subnational Infrastructure	**Catalytic Finance Foundation** is an International not-for-profit organization set up to accelerate the implementation of sustainable low-carbon climate-resilient infrastructure, in support of the Paris Climate Agreement and the UN SDGs.
Impact Certification	**Gold Standard** is an international standards NGO specializing in SDG and impact measurements and third-party certification.
Anchor Investor and Concessional Capital provider	**The Green Climate Fund (GCF)** is the is the world's largest dedicated fund helping developing countries reduce their greenhouse gas emissions, established by the UN system. It has committed to USD $150 million of equity in a first-loss position (with a concessional return) to SCF and USD $19.5 million of grant funding for Technical Assistance.

Capacity Building

Capacity-Building

"It is often said that the issue is not a lack of finance for sustainable and transformative projects but rather a lack of viable projects at a scale sufficient to interest institutional investors."

Stewart Maginnis, IUCN Deputy Director General

The SCF Capacity Building arm of the TA is built to address this critical aspect of the nature restoration project and environment-positive project world, a major need that is as yet not properly filled. To address this need,

SCF Capacity building has two main aims:

- **Primarily, boosting capacities in the pre-investment phase** to stimulate and support investable projects in the design and development stages, readying them for investments.

- **Secondarily, but at the same time, strengthen the enabling environment for sustainable finance;** supporting the replication of successful models more broadly in an international sense, for others to learn from SCF experiences with capacity building**.**

The **people, or sectors, targeted by the capacity-building program under SCF** are diverse, often unconnected groups:

- **Project developers**
- **Subnational and national authorities**
- **Regional investors**

For these groups, the SCF TA provides, according to their needs:

- Technical knowledge
- Stimulating growth of communities of practice in all regions SCF operates in.
- Capturing of lessons learned, for replication and scaling up sustainable finance opportunities.
- Development of the tools, resources, and best practices to help entrepreneurs and project developers to develop bankable, investment-ready projects with a high impact on climate mitigation.

In all work, project stakeholders, such as investors and governments, are encouraged to demand high-integrity work practices, standards, and mandatory safeguards, with recording of any SDG impacts.

IUCN is one of the world's leading authorities on Nature-based Solutions, and these are expected to be implemented where feasible, being potential alternatives to traditional grey infrastructure or non-natural nature restoration work (e.g. concrete, steel, or plastic-based structures, etc. as solutions).

Capacity Needs described

An initial assessment of needs revealed the following as critical areas to be addressed for any capacity building interventions across the target groups:

- **Raising awareness** about the potential for investing in green infrastructure and NbS in key targeted sectors,
- **Enhancing capacity in the design and delivery of investment-ready projects** with high potential to address major social and environmental challenges,
- **Increasing local understanding** of innovative financing instruments, blended financial instruments, Public Private Partnership (PPP), and similar,
- **Strengthening the enabling environment for investments** in green infrastructure and NbS,
- **Replication and scaling up** of high-integrity, green infrastructure projects.

On the following pages, we show an overview of TA activities, along with some of its results and effects.

Progress of Capacity Building activities during 2021-2024

Online SCF training webinars for the four regions (2021)

The SCF TA capacity building activities, led by IUCN in collaboration with the SCF consortium partners: Catalytic Finance Foundation, Gold Standard Foundation and Pegasus Capital Advisors, kicked off in 2021 with four online training webinars for the SCF target regions: the Mediterranean/Balkans, Africa, Asia-Pacific, and Latin America and the Caribbean.

The webinars were organized with the aim of (i) establishing a communication and consultation process with all SCF countries, (ii) enhancing the understanding on the accessibility and use of the SCF mechanism; and (ii) discussions on the steps to achieve the benefits of its member countries, subnational actors and partners.

The webinars started with introductory remarks recalling the SCF initiative and its Technical Assistance (TA), followed by the presentation of the programming process of the SCF under the GCF, opportunities for support and investment by the SCF TA and Equity Fund, project eligibility criteria, and the SCF project submission platform.

The participants and the SCF consortium held exchanges on the following dimensions of the SCF initiative:

- Eligibility of specific activities based on national and local needs
- Support to formulating and preparing eligible projects for SCF Equity Fund
- Linking project development and funding with SCF action planning process
- Development of SCF country profiles
- Potential synergies with existing similar initiatives and programs
- Importance of projects ownership (sponsors)

Information gathered through the webinars was used for the identification of priorities of the subsequent capacity building program.

Regional Capacity Building Workshops in Latin America and the Caribbean, Africa and the Asia-Pacific (2022-2023)

Based on the feedback from the online training webinars held in 2021 and the initial needs-assessment of capacity building conducted during the project's inception, in 2022 and 2023 the SCF TA organized four regional workshops.

The workshops stimulated rich dialogue among ministries, financial authorities, investors and project developers in each region. The exchanges highlighted the deepening interest in blended finance to accelerate private capital flows into innovative climate-smart industries and adaptation actions, as well as the need for better enabling policies and regulations.

In total, the four workshops welcomed more than 280 participants from 38 countries, including 77 public authorities, 82 project developers and 46 financial institutions.

1. **Latin America and the Caribbean workshop: Quito, Ecuador on 6-8 September 2022** … attended by 111 participants from 16 countries, including 24 public authorities, 47 project developers and 10 financial institutions.

2. **Africa workshop: Saly, Senegal on 14-16 March 2023** … attended by 82 participants from 18 countries, including 33 public authorities, 6 project developers and 8 financial institutions.

3. **Asia-Pacific workshop: Bangkok, Thailand on 6-8 November 2023** … attended by 50 participants from 4 countries, including 13 public authorities, 15 project developers and 19 financial institutions.

4. **Indonesia workshop: Jakarta, Indonesia on 10 November 2023** … attended by 39 participants in Indonesia, including 7 public authorities, 14 project developers and 9 financial institutions.

Regional Capacity Building Workshops (continued)

Key learnings from the regional workshops were as follows:

- **Blended finance** is a relatively new financing approach which has the potential to bridge countries' climate and nature finance gaps. Its upscaling will require further knowledge transfer on the replicable mechanisms, and support from international partners to facilitate access to funding.

- Governments and financial authorities are implementing a **variety of policies and instruments** adapted to their unique national contexts to catalyze private finance for climate actions and NbS (e.g. national climate/biodiversity, sustainable finance taxonomies, green/blue bonds, capacity building of banking sectors, tax incentives, PPP)

- **Integrated policy solutions** can be applied to both climate and biodiversity challenges, such as through the **integration of NbS** to address mitigation, climate adaptation and ecosystem management.

- **Subnational governments** are the key players for accelerating local climate and NbS actions. There is need for capacity building in **managing investments**, improved **financial sustainability** and **access to capitals**.

- Private sector needs **stability and consistency** of **policy and regulatory frameworks** to operate effectively. There is further need to support businesses to invest in innovative activities.

- Investing in **climate adaptation** requires better **data** to quantify the costs and benefits to make informed decisions, and **larger and more accessible adaptation funding**.

- Opportunities for **dialogue and collaboration across governments and private actors** can help deepen understandings on the priority actions and promote collective learning on the best use of innovative financial mechanisms.

Thematic Training Programs: National Workshops, Webinars, E-learning Courses (2024)

Based on the feedback from the capacity building activities in previous years and the insights gained through the implementation of the SCF initiative, the SCF TA identified further capacity needs among public authorities, project developers and regional financial institutions. Taking such needs into account, in 2024 IUCN developed three training programs:

1. **Attracting Nature and Climate Finance for Subnational Governments**
2. **Sustainable investment in agribusiness: Nature-based Solutions and Regenerative Agriculture**
3. **Managing ESG risks and impacts in nature and climate investments**

To enable deeper action-oriented peer learning among stakeholders and greater access to capacity building opportunities by subnational stakeholders, SCF TA is organizing a series of national training workshops in 4 countries across the SCF target regions during 2024.

The workshops have so far been attended by over 120 participants and have stimulated discussions on the financing mechanisms accessible by subnational stakeholders, designing agribusiness projects with positive impacts on nature, and strengthening Environmental, Social and Governance risk management in investments.

In the remainder of 2024, the SCF TA will also disseminate the training programs via webinar and E-learning course formats to enable access to SCF capacity building contents by a broader audience in the SCF eligible countries and beyond.

Project Preparation

Catalytic Finance Foundation oversees the project preparation component of the TA facility. The goal is to identify and strengthen investment proposals for the Fund.

It consists of two activities:

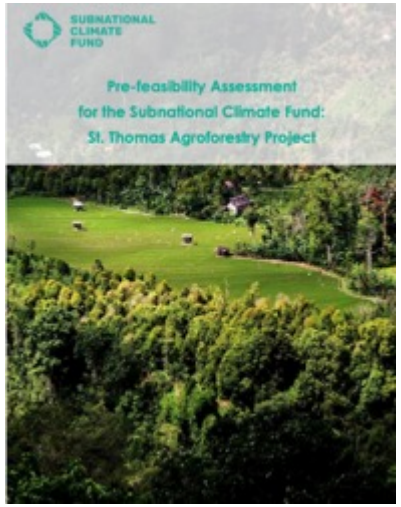
- **Project sourcing:** Catalytic collaborates with governments, private developers, city networks, financial institutions and non-profits to identify potential projects and builds the project pipeline for the SCF.

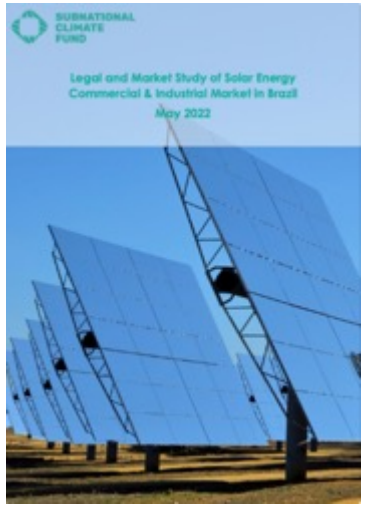
- **Technical assistance (TA) to prepare projects towards better environmental and social safeguarding, SCF targeted impacts, and bankability:** Catalytic reviews the submitted projects, select priority projects, scope their TA needs and deploy TA. Generally, TA can be offered by three types of studies: Pre-feasibility Studies, Feasibility Studies, and Environmental, Social and Impact Assessments (ESIA).

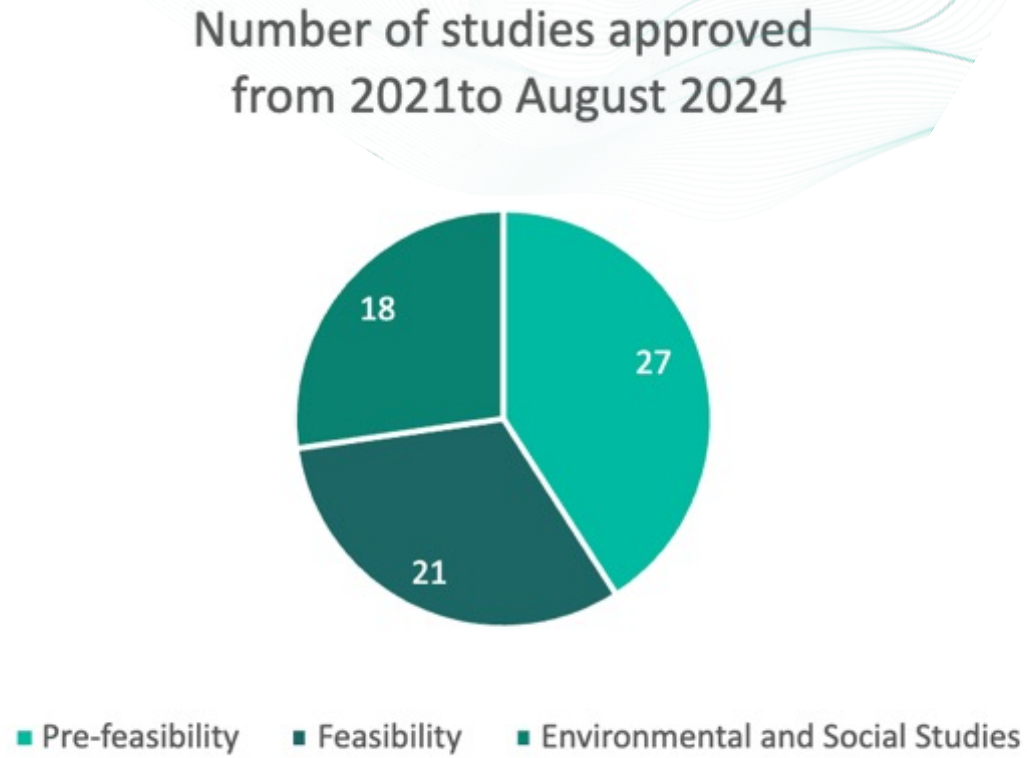
We offer three different of studies; Pre-feasibility assessments, Feasibility Assessments and Environmental, Social Studies.

Pre-feasibility studies involves an initial examination of the technical, economic, and legal aspects of the proposed project.

- It aims to determine whether the project is technically feasible, economically viable, and legally permissible.
- This assessment typically includes preliminary engineering studies, market analysis, route selection, cost estimation, and identification of potential risks and challenges.
- The primary goal is to determine whether the project should proceed to a more detailed feasibility study.





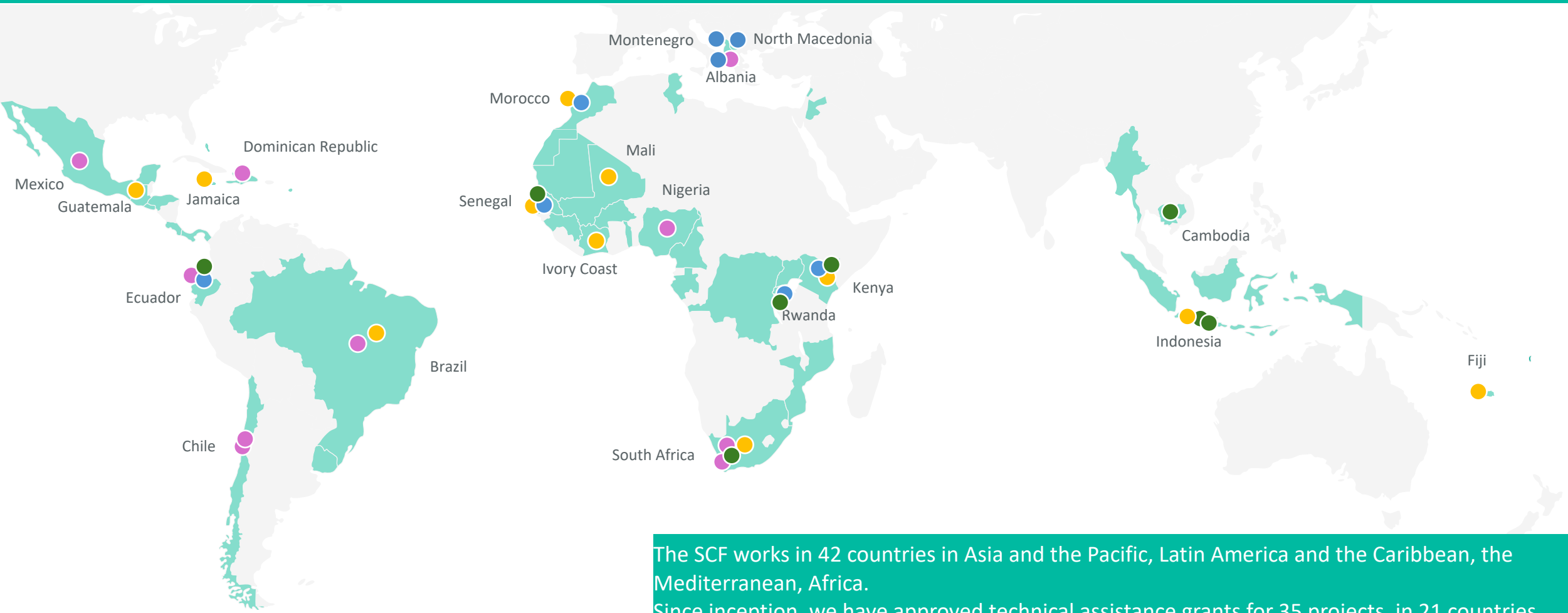


Feasibility study is a more comprehensive and detailed study conducted to validate the technical, economic, and legal aspects identified in the pre-feasibility stage.

- It involves an in-depth analysis and evaluation of various factors, including engineering design, construction requirements, financial projections, regulatory compliance, and risk assessment.
- Feasibility studies aim to provide a clear understanding of the project's feasibility, potential benefits, costs, risks, and return on investment.
- The outcomes of feasibility assessment help stakeholders make informed decisions about whether or not to proceed with the project.

Environmental Social and Impact Assessment (ESIA) is a systematic process for identifying, predicting, and evaluating the potential environmental and social impacts of a project throughout its life cycle.

- It involves assessing the project's potential effects on ecosystems, biodiversity, water resources, air quality, land use, cultural heritage, human health, livelihoods, and communities.
- ESIA aims to ensure that potential adverse impacts are identified and mitigated to minimise harm and enhance positive outcomes.
- The assessment typically includes stakeholder engagement, baseline studies, impact analysis, development of mitigation measures, management plans and monitoring (MRV)
- ESIA findings are crucial for obtaining regulatory approvals, securing financing, and fostering stakeholder acceptance and support for the project.



The SCF works in 42 countries in Asia and the Pacific, Latin America and the Caribbean, the Mediterranean, Africa.
Since inception, we have approved technical assistance grants for 35 projects, in 21 countries.
A project often receives more than one grant as we can cover a variety of studies.

Renewable energy

Waste & water management

Sustainable agriculture

Urban development solutions

Projects

SUSTAINABLE AGRICULTURE

1. Brazil: Agroforestry
2. Fiji: Sea & Soil
3. Guatemala: Wubu
4. Indonesia: Aquaculture
5. Ivory Coast: Layaki Bio
6. Jamaica: Golden Grove
7. Kenya: Salt
8. Mali: Ancient grain
9. Morocco: Date Farm
10. South Africa: Terragrn

RENEWABLE ENERGY

1. Albania: Utility scale Solar Photovoltaic project
2. Albania, North Macedonia, Montenegro: Zvilo
3. Brazil : Solar
4. Chile: Antuko
5. Dominican Republic: Solar
6. Mexico: Luxun
7. Nigeria: Sosai
8. Senegal: Walorise
9. South Africa: Eskom

Projects

WASTE & WATER MANAGEMENT

1. Cambodia: GAEA
2. Chile : Waste Management
3. Ecuador : Waste Project Portoviejo
4. Indonesia: Bali Plastic Neutral
5. Kenya: Biobuu
6. Rwanda: Insect Protein Production Facility
7. Senegal: Touba
8. South Africa: Mustapha
9. Global: Study on Black Soldier Fly Sector
10. Global: Waste to Energy - Pyrolysis

URBAN DEVELOPMENT SOLUTIONS

1. Ecuador : Six Senses Cerro Verde Galapagos
2. Mexico/ Kenya: Curvalux
3. Rwanda: e-motorbike
4. Morocco/ Senegal: IFRIA

Sustainable Agriculture

Agriculture

Picture: Agroforesty project, Brazil

Brazil: Agroforestry

Brazil: Agroforestry

Overview:

SCF is providing technical assistance for an agroforestry project in the Brazilian state of Roraima.

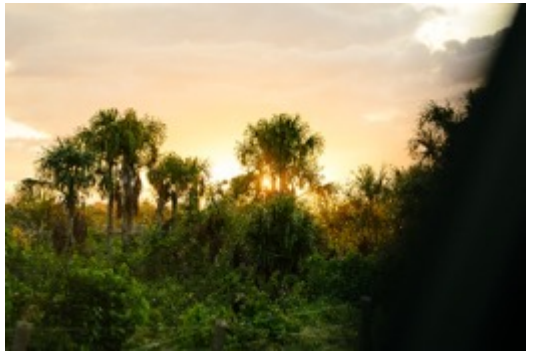
Currently the project has 285 hectares of land across 2 properties. 75 hectares of agroforestry have been planted and two nurseries have been constructed to support expansion. The project developer is in the process of acquiring 2,000 hectares for agroforestry and has committed to conserving an additional 2,000 hectares.

The challenge:

Deforestation is a significant problem in Brazil. In the project area, deforestation began over 40 years ago, leading to habitat destruction, reduced biodiversity and food resources, soil degradation, land and river pollution, and rising temperatures.

Project Area Deforestation

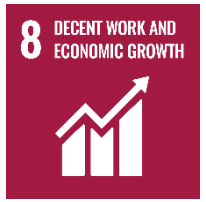
SCF is supporting the project by facilitating **a pre-feasibility study for a Water Resource Assessment**, irrigation design and climate risk considerations as well as an **ESIA**.



OUR IMPACT

SDG 5: Gender Equality

The project should provide formal work opportunities for as many local women as possible with an initial target of 30% of the workforce (to at least 50% ultimately), including management positions. In the nursery 100% of the workforce are women and 1/4 of the field workers are Venezuelan refugees.



SDG 8: Decent Work and Economic Growth

The project is expected to create 800 direct jobs by 2030.

SDG 13: Climate Action

The project intends to sequester carbon within site soils and plant biomass, estimated to be approximately 970,000 tonnes of net carbon removal over 30 years (32,000 tonnes annually).

The project also aims to provide climate resilience for the land by regenerating soil, preventing runoff and soil erosion, providing heat-reducing microclimates, etc.

Agriculture

Fiji:
Sea & Soil

Overview:

The SCF is preparing to provide technical assistance to the "Seaweed & Biochar Revolution for Organic Agriculture" project in Fiji. This project will focus on cultivating and harvesting seaweed on a large scale to produce organic biofertilizers, biopesticides, and biochar, aimed at promoting sustainable agricultural practices in Fiji.

Fiji, a vast archipelago with diverse landscapes and climates, comprises over 332 islands spread across 1.3 million square kilometers in the South Pacific Ocean. Approximately 60% of Fiji's land area (about 1 million hectares) is covered by forests.

However, deforestation, intensive farming on slopes and flatlands, and the reclamation of mangrove swamps have led to significant land degradation. Fiji's national development plans emphasize sustainable agriculture, climate resilience, and women's empowerment, with a focus on promoting organic farming and "blue economy" initiatives.

The challenge:

Fiji loses over 50 tons of soil per hectare annually due to run-off, a rate four times higher than the average for tropical regions. Additionally, the agriculture sector is heavily dependent on expensive imported fertilizers and pesticides. Farmers face high input costs and declining yields, largely due to limited access to organic alternatives.

The project is currently receiving Technical Assistance from the SCF for a White Paper Study.

TA Studies:

The SCF has approved a grant for a White Paper Study on the Seaweed Market in the Global South.

The study will include market analysis of seaweed-based biofuels and biostimulants. Additional case studies will be included on other market applications such as bioplastics, animal feed, human food and nutraceuticals.

OUR IMPACT

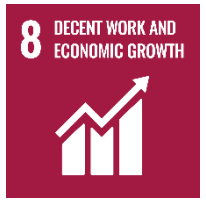
SDG 13: Climate Action

Seaweed products can substitute more carbon-intensive products, such as petroleum fuels, animal-based feedstock and non-organic fertilisers. Produced biochar is expected to sequester carbon permanently.

SDG 5: Gender Equality

Women in the global south countries are often categorized as "inactive" due to their unrecognized and unpaid roles in caregiving and household tasks.

Investments in seaweed would adopt SCF gender policy, which complies with 2X criteria. Such measures aim to include 50% of jobs for women during the operating phase and support females on management positions. The project is also expected to empower up to 100,000 local women through collection activities.



SDG 8: Decent Work and Economic Growth

Many countries in the Global South experience high levels of unemployment and informal labour. This project aims to create 1,000 jobs for local communities and supply agricultural products to local markets.

Agriculture

Picture: Wubu, Guatemala

Guatemala: Wubu

Guatemala: Agroforestry

Overview:

The SCF has provided a technical assistance for a land baseline assessment of a bamboo plantation and processing plant in Guatemala, which will sequester carbon and produce a sustainable alternative to timber.

Wubu, the project developer, is a pioneering company that specializes in the development of sustainable circular productive systems centered around bamboo. Their core focus lies in the establishment of bamboo plantations within agroforestry systems, aimed at revitalizing degraded land and promoting food security.

The challenge:

Susceptibility: Guatemala is one of the Latin American countries most vulnerable to the effects of climate change. Since 1960, the nation has experienced an average temperature increase of 0.6°C per year, along with a 2.5% rise in the frequency of hot days each decade.

Natural Disaster: The past two decades have seen a sharp increase in the occurrence of both droughts and floods, resulting in substantial economic setbacks for the nation.

Demand for materials: Moreover, the production of building materials like timber, rubber, and plastic carries a significant carbon footprint.

Potential Solution: Bamboo, as an eco-friendly alternative to traditional wood, can help tackle deforestation by providing sustainable materials for construction and other industries

Guatemala: Agroforestry

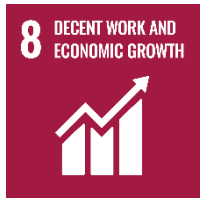
The project has received Technical Assistance from the SCF for **a land baseline assessment**

TA Studies:

The SCF has provided a grant for a land baseline assessment including:

- Site inspection.
- Current site status and ownership.
- Site history.
- Suitability for growing bamboo.
- Potential for intercropping.
- Climate resiliency assessment –flood, drought, water supply, storms, etc.

OUR IMPACT



SDG 5: Gender Equality

Guatemala scored 0.66 in the gap index in 2022, and this represents that women were 34% less likely to have equal economic participation and opportunities than men.

The project intends to provide formal work opportunities for local women and will comply with the SCF Gender Policy.

SDG 8: Decent Work and Economic Growth

The project is expected to create sustainable jobs and provide training opportunities for local communities.

SDG 13: Climate Action

Bamboo is highly effective at sequestering carbon in soils, with estimates ranging from 50 to 100 tonnes per ha/year. The project aims to:

- vegetate vacant land that has previously been used for agriculture or livestock use.
- sequester carbon through the production of biochar (further sequestering 10 tonnes/ha/year).

SDG 11 Sustainable Cities and Communities

The creation of an ecovillage and establishment of industrialization processes to produce bamboo poles/strips/products is expected to result in more sustainable communities.

Agriculture

Indonesia: Aquaculture

Indonesia: Aquaculture

Overview:

SCF has provided technical assistance for a project alongside an Indonesian-based company that facilitates investments in sustainable aquaculture through debt and equity arrangements. The company's investments place high importance on:

Farm improvements and modernisation to minimise environmental impact.

Protection and restoration of mangrove habitat – current projects aim to sequester 600kt of carbon by 2050.

Financial arrangements that work for local farmers.

SCF supported the Asian Aquaculture Facility (AAF), a scalable blended finance initiative that provides revenue-based financing to drive sustainable aquaculture development. In this project, AAF intended to convert 26 hectares of milkfish ponds in Kalimantan into modern shrimp farms and mangrove forests, creating a more sustainable and efficient aquaculture environment. AAF aimed to tap into the promising future of aquaculture, with demand for aquaculture products expected to grow over 4% annually—double the growth rate of other animal protein sources.

Indonesia: Aquaculture

The challenge:

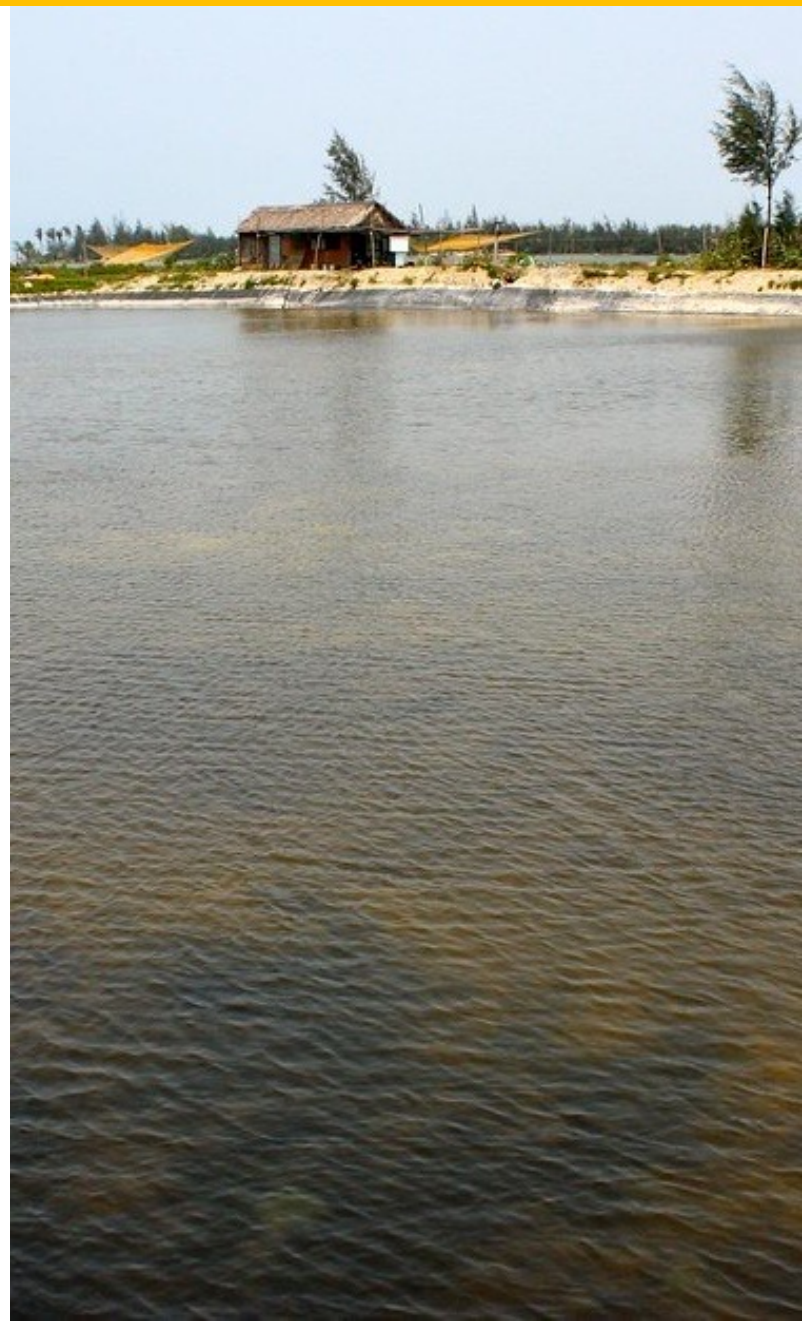
Aquaculture is an essential part of Indonesia's agricultural industry, however suffers from decaying infrastructure and a lack of streamlined management. Traditional operations are often dilapidated, poorly controlled and unsustainable, resulting in water pollution and a higher carbon footprint than modern farms. Modern farms also have much higher earnings (5-8 times) and employ more people (15-30 times).

Mangroves have also historically been cleared to build aquaculture farms, which still occurs in some areas. This is problematic as mangroves are a critical nursery for juvenile marine life, provide coastal protection, and are a rich carbon sink. Unfortunately, farm operators who wish to improve their farms, for financial and environmental reasons, often don't have access to credit to do so.

TA Studies:

SCF has supported the project through a pre-feasibility baseline study, with the objectives to:

- Determine baseline soil carbon concentrations within site areas.
- Complete a mangrove assessment including biomass health, density and diversity.

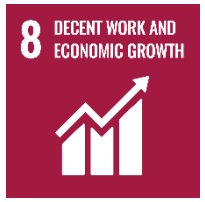


OUR IMPACT

SDG 5: Gender Equality

The project would aim to implement AAF policy, including:

- A 'Women in Aquaculture' Apprenticeship Program to empower female entrepreneurs in the industry.
- Four new high-skilled STEM jobs on the farm, with a target of 75% of hires being women.
- Promoting more women in decision-making positions.
- Appropriate labour standards are considerations under AAF projects, with relevant policies in place.



SDG 8: Decent Work and Economic Growth

AAF projects promote the development of more productive, efficient, and sustainable aquaculture operations. Based on an area of 13 ha, it is estimated that the modern farm would employ an additional 35 workers directly. Actual numbers would depend on the farm design – could be up to 70 additional jobs.

SDG 13: Climate Action

Aquaculture farms either improved or developed under the AAF are to be designed and managed to increase efficiency and sustainability, with anticipated reductions in carbon emissions.

The AAF also implements mangrove protection and restoration programs, with associated carbon sequestration. Mangroves store approximately 900 tonnes of carbon per hectare. For the 13 ha, this equates to 11,700 tonnes of carbon (43,000 tonnes CO2e – 10,000 petrol cars driven for one year).

Agriculture

Ivory Coast:
Layaki Bio

Overview

Ivory Coast is the third-most populous country in West Africa with 30.9 million inhabitants in 2023. Each year, around 40,000 tons of fruits are exported from the Ivory Coast to Europe. Meanwhile, the fruit industry is facing significant challenges as fruit diseases and inadequate post-harvest facilities result in approximately 40% of produced fruit being wasted. The reliance on traditional farming methods and limited access to modern technologies also hinder competitiveness.

In the Poro region, 115,000 tonnes of mangoes are produced every year with approximately:

- 50,000 sold as fresh mangoes.
- 5,000 tonnes transformed into other products.
- 60,000 tonnes wasted, emitting greenhouse gas (GHG) emission from the field or disposal site.

The project aims to increase the scale and efficiency of processing mangoes into easily storable and transportable products, such as dried fruit, mango puree, juice, and butter. By constructing a larger processing plant with cold storage, the facility will enable the sale of mangoes that would otherwise go to waste during the harvest season. Additionally, the expanded capacity can be used year-round to process other seasonal fruits like pineapples and bananas.

The challenge:

The Ivorian production of mango is around 180 MT annually. However, the fruit industry produces a lot of waste. In the Poro region, only 40% of mangoes meet the criteria for export or sale in supermarkets. For the remaining 60%, they are left to rot at the edge of fields or in landfills. After harvest, keeping mangoes fresh is challenging due to their fragility and rapid ripening.

Additionally, rotting fruit promotes the spread of midges that can attack mango trees and damage crops. It also attracts mosquitoes, which carry malaria, the leading cause of death in the Poro region.

The project provides a solution to transform fruits into products which are easier to keep and export with lower transportation costs, preventing waste and carbon emissions. Currently, the dried mangoes from this company are completely produced by hand in a small production unit.

By developing a processing plant with new technology to increase capacity and efficiency, the project is expected to:

- Help to reduce approximately 1,500 tonnes of GHG emissions by preventing organic waste each year.
- Improve the workforce of the local population of the Sinématiali department by providing 500 full-time job positions.
- Benefit women in the area by providing stable jobs, as well as more access to improved health care and education.

Technical Assistance

To further support and inform the development of this project, the SCF's Technical Assistance Facility is commissioning a pre-feasibility study including:

- Site visit and assessment of the existing project and facility.
- Land assessment for the new processing plant including utilities, transportation, geographic risk, as well as the legal and regulatory framework.
- Availability and seasonality of mango and pineapple production in the Poro region.

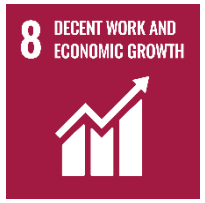
The SCF is also commissioning an environmental and social study for stakeholder consultation in to assess, among others, the potential volume of fruits in the region with other farm holders, the government collaboration with the project, and synergies with other stakeholders.

OUR IMPACT

SDG 5: Gender Equality

Ivory Coast scored 0.61 in the gap index in 2022 indicating that women were 39% less likely to have equal economic participation and opportunities than men. Currently, this women-owned company employs 500 seasonal employees for 3-4 months per year of which 460 employees are women. The project is expected to:

- Create an additional 100 job positions – mostly for women.
- Create further decision-making roles for women
- The SCF gender policy and 2X criteria will be applied in the process of this project for employment and leadership.



SDG 8: Decent Work and Economic Growth

Ivory Coast has an unemployment rate of 3% and an informal employment rate of 88%. The project currently creates mostly temporary jobs only. If the new transforming plant would process 100% of the fruit wasted, the project is expected to:

- Create 100 additional jobs
- Convert all current 500 seasonal posts into permanent full-time posts.
- Benefit the employees from social benefits such as unemployment, retirement rights, as well as a housing savings plan.

SDG 13: Climate Action

The project is expected to avoid approximately :

- 45,000 tonnes of organic waste annually by producing useful products from mangos that are currently not sold to the market.
- 1,500 tonnes of methane emissions each year (45,000 tonnes of CO_2e).

Agriculture

Golden Grove: Jamaica

Jamaica: Agroforestry

The project has received Technical Assistance from the SCF for a pre-feasibility study, Feasibility Studies, and an Environmental and Social Impact Assessment (ESIA)

Overview:

SCF is considering an investment in an agroforestry project in Jamaica. **The project is an agriculture production project developing 500+ acres of coconut trees and intercropped ground produce, post-harvest processing infrastructure, cultivation operations and smallholder farmer extension services**. The project is the foundation of a scaled agroforestry infrastructure strategy across geographies and crops, partnering with the Jamaican government to reclaim unused former sugarcane land for trees and food production. Production upon the orchard's maturity will annually yield 6.4 million coconuts and 1,300 metric tonnes of fresh produce – ginger, turmeric, papaya, yucca and ackee.

The project plans to expand its cultivation acreage within Jamaica and through partnerships in Haiti, Brazil, Costa Rica, Panama, and the Bahamas.

Jamaica: Agroforestry

The challenge:

The Caribbean must modernize food production models to withstand current and future climate change impacts.

An unhealthy reliance on low-quality food imports may create social and economic vulnerabilities, while the COVID-19 pandemic, geopolitical events, and energy costs have further disrupted food supply chains. This climate of vulnerability has led to a timely shift by government and business leaders to develop agri-businesses as a means of providing food security and reducing import dependency.

Jamaica is a net importer of coconut products, with 4,700 coconut producers who are largely small farmers with less than 10 hectares under cultivation. Current production is insufficient to supply local demand, or to capitalize on opportunities that exist in the global and regional markets. Jamaica's Coconut Board has resolved to attract 1,500 new coconut farmers to develop 150,000 acres of new coconut cultivation over the next eight years. Regenerative Agroforestry Partners plans to build expansive infrastructure upon which the Jamaican coconut industry can thrive.

Jamaica: Agroforestry

Pre-feasibility Assessment:

Analysis of existing on-site biodiversity, ethnobotanical resources, biological corridor

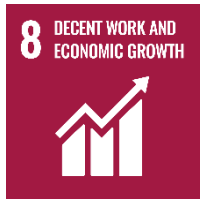
ESIA:

- Environmental and Social Impact Assessment
- Outreach to the rural farming community to understand education levels and capacity building needs to achieve climate smart agriculture transitions
- Outreach to the rural farming community to determine the SDG impact goals for the local population

Feasibility Studies:

- Analysis of the Jamaican coconut industry, including global market trends, industry and market overview, value chain analysis, assessment of consumption and marketing strategies.
- Detailed soil sampling and analysis to determine suitability of selected crops, irrigation needs and soil management practices.
- LIDAR topographic survey of the project site to inform/establish facility boundaries, crop layout, optimization, and structural parameters.
- Water analyses.
- Planning for community inclusion and capacity building for vocational training of at-risk youth in climate smart agriculture and packing house facility activities.
- Analysis of women and children's nutritional goals in the communities around the project site.
- Feasibility for nature-based solutions for on-site carbon neutral and carbon negative input production methodologies.
- Feasibility of applying nature-based solutions considering the landscape and ecosystem of the entire project space.

OUR IMPACT



SDG 8 Decent Work and Economic Growth

Through the project, we hope to create local employment in the construction of model farm infrastructure (30 FTE), cultivation operations (28 FTE), and the activation and expansion of a proximate smallholder farmer network (TBD). Additionally, extension and training services, and post-harvest aggregation and processing facilities will increase yields and improve incomes of smallholder farmers.

SDG 12 Responsible Consumption and Production

Smallholder farmers planned to have access to outreach support services, digital registration, and data capture. They should also be trained in optimal cultivation methodologies. The project to contract with, and purchase outputs from smallholder farmers. Farmers will have access to subsidized inputs – seedlings, seeds, biological fertilizers, biochar. We also aim to enhance water use efficiency through soil restoration practices.

SDG 13 Climate Action

The project is expected to have relevant CO_2 reduction through Afforestation/Reforestation (A/R). Quantification will be measured in accordance with Gold Standard methodology.

SDG 15 Life on Land

The project is expected to activate biodiversity and productivity of abundant, public and private lands.

SDG 3 Good Health and Well-being

The project should improve food security of the local population and will particularly monitor the nutritional needs of women and children in the community.

Agriculture

Kenya: Salt

The project has received Technical Assistance from the SCF for a pre-feasibility study.

Overview

SCF is providing technical assistance to a saline agriculture project in Northern Kenya (Turkana), developed by Nara, using saline water to create productive agricultures in order to capture soil carbon and produce climate-positive products for local consumption and export markets.

Turkana county, one of the 29 ASAL (Arid and Semi-Arid Landscape) counties in Kenya, like many other drought-stricken counties in Kenya, suffers from freshwater shortage while having access to abundant saltwater resources both in its saline lakes and groundwater. Millions of pastoralists who live in the northern counties struggle with chronic drought, lack of freshwater, and the dwindling grazing resources. The project aims to tackle these challenges by creating large regenerative saltwater farms that produce affordable livestock feed for local communities while providing alternative livelihoods in the production of high-value ingredients for export markets such as cosmetics and nutraceuticals.

The proposed phase-1 project will be located on the shores of Lake Turkana, in partnership with the Ministry of Agriculture and Livestock of Turkana. Other stakeholders include WFP Turkana, and local NGOs working in the region.

The challenge:

Turkana region has been particularly threatened by the impacts of climate change, primarily drought. The 2023 drought resulted in an estimated 2.6 million deaths of livestock in Kenya, representing a significant blow to livelihoods and economic activity.

In 2023, the National Government of Kenya dedicated significant resources into drought management and support for pastoralist communities in the ASAL regions, in which pastoralists are provided with cash payments during drought conditions for the purchase of feed.

However, a major challenge in ASAL (Arid and Semi-Arid Lands) counties is the lack of affordable livestock feed. Pastoralists remain reliant on common grazing pastures, which are severely degraded and no longer able to support the current herd populations. Additionally, the limited availability of feed in these areas is prohibitively expensive, costing over $400 USD per tonne. This high cost is primarily driven by the lack of local producers and the expense of transportation.

ASAL counties particularly struggle to grow fodder and feed due to the lack of freshwater. While having the largest groundwater deposits in the East African region, this water is saline/brackish and therefore not generally suitable for traditional agriculture.

Turkana has been particularly threatened by drought, but the abundance of saltwater and unused land makes it a uniquely suitable place for saline agriculture production. The project is expected to:

Produce 32,500 Tons per year of food, livestock & aquaculture feed, bio-powder, bio-salts, Distichlis hay.
Capture around 10 tCO_2e per hectare annually.

Technical Assistance

To further support and inform the development of this project, the SCF's Technical Assistance Facility is commissioning a pre-feasibility study, including the following assessment:

1) Analysis of the status of the pilot project and assessment of the results in terms of the production of products through a site visit. Consultation with the county government and community members to ensure their adequate involvement in the project.
2) Identification and evaluation of the legal and regulatory framework for the project according to national laws, regulations, and policies.
3) Identification of potential regulatory and governance challenges that could impact the project.
4) Assessment of potential tax implications and incentives available.
5) Provide general desktop market overview of products such as vegetables, livestock and aquaculture feed, bio-powder, bio-salts, Distichlis hay.

OUR IMPACT

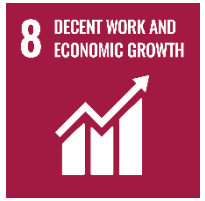
SDG 5: Gender Equality

Kenya scored 0.71 in the economic participation and opportunity area of the gender gap index in 2022. Meaning that women were 29% less likely to have equal economic participation and opportunities than men. 98% of women are employed informally.

The developer commits to a minimum 50% women representation in upper management and the wider workforce, including supporting women-led co-ops.

The project intents to use existing women cooperatives to operate the project, from field operations to processing and forage activities.

The project will comply with the SCF Gender Policy and 2X criteria for employment and leadership.



SDG 8: Decent Work and Economic Growth

The project is expected to create 150 direct jobs, with a further 700-1000 indirect jobs through ‘spoke’ producers.

SDG 13: Climate Action

The project is expected to:

- Avoid GHG emissions by producing less carbon-intensive products, such as livestock and aquaculture feed for the local market. Avoided CO2e estimates are to be calculated in a future study.
- Sequester approximately 10 tonnes of CO2 equivalent per hectare annually in site soils. This estimate is based on typical figures from tropical afforestation and reforestation projects, but will be confirmed through further evaluation.

Ancient grain in Mali

Overview:

SCF has supported a Malian agro-processor promote sustainable and regenerative farming practices for fonio, an ancient, nutritious, and drought-tolerant grain from West Africa, using it as a foundation to expand the cultivation of indigenous African foods on a larger scale.

The venture plans to promote smallholder capacity building through access to inputs and equipment, provide output finance and logistics support for smallholder sourcing, operate an industrial processing unit in Mali and establish an export and distribution hub in Senegal.

The challenge:

The West African climate is characterized by **low rainfall and increasingly frequent and intense droughts, resulting in widespread agricultural challenges**. In order to meet the needs of the region's growing population, many West African nations such as Mali and Senegal rely on imported grains and cultivation of widely-accessible crops, such as wheat, that are not well-suited for the climate. Recently, there has been a renewed focus on expanding the cultivation of traditional ancient grains from the region in order to meet the demands, such as fonio.

The fonio value chain in West Africa is not currently scalable. Smallholder farmers have low productivity and production due to limited access to inputs. Fonio cultivation through existing methods leads to harvest losses, barren arable soils; poverty, stagnant incomes, and poor nutrition. Furthermore, pre-processing (threshing, winnowing, cleaning, sorting, dehulling) without proper equipment yields a poor quality of grains.

Technical Assistance

SCF has provided support to the project in the form of feasibility studies and an ESIA.

The ESIA study of the project includes:

- Identified environmental and social risks of the processing facility in Mali, including stakeholder consultation.
- An Environmental and Social Management Plan (ESMP) to manage risks associated with the project. Policy will also be implemented to promote gender impact.

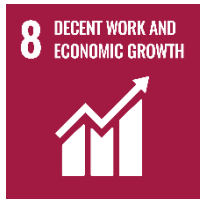
The feasibility studies of the project includes:

- A lifecycle assessment (LCA) to determine the carbon footprint of fonio, for comparison with other crops
- A technical and economic review of new regenerative and organic production methods for increasing the yield of fonio grain
- A review to assess the possibility of increasing the fonio planting acreage in Mali

OUR IMPACT

SDG 13: Climate Action

The project aims to achieve climate resilience and mitigation impacts. Fonio is a native, drought-resistant crop and may increase the resilience of drought-prone land through improved soil health, vegetation cover, and stability. This may also be beneficial for food security. Fonio is also expected to serve as a more sustainable alternative to other grains due to carbon and water efficiency (to be confirmed by the LCA), allowing for harvesting on soils otherwise unsuitable for agricultural cultivation.



SDG 8: Decent Work and Economic Growth

The project supports smallholder livelihoods through climate-resilient agriculture. The project is expected to improve the livelihoods of local people by providing employment in the construction of fonio post-harvest facilities as well as by contracting up to an estimated 70,000 smallholder farmers. Incomes are expected to further improve through outreach support services and the provision of improved seed, yields and tools via digital data capture. The project may also offer its producers a firm, year-round purchase price for fonio, removing commodity and income volatility.

SDG 5: Gender Equality

Women and men perform different activities in growing and processing fonio and other grains. After harvesting, women tend to do the labour work in the pre-processing of staple crops such as fonio. According to UNDP's Gender inequality index, Mali is ranked in place 186 from 191 countries. The project is expected to improve general livelihoods, but particularly those of women in alignment with 2x challenge criteria by creating 36,000 new jobs in rural areas, including 19,440 women (54%), 10,080 youth (28%) and 6,480 men (18%). The project plans to create a processing facility with state-of-the-art equipment, freeing women from manual work, saving time and water, so that they have time to do more creative and fulfilling work.

Agriculture

Morocco: Date-farm

Overview

SCF has provided TA to an organic olive, dates, and almonds farm in the East of Morocco. This project aims to accelerate the development of distribution channels, whilst delivering meaningful social and environmental impact by developing a complementary smallholder producer sourcing scheme, providing technical assistance and market access to smallholder market participants.

The key goal of such a program would be to create a production network between large-scale central farms by means of its local implementation partner and various associations of smallholder farmers of the surrounding oasis communities.

The challenge:

The desert climate in Morocco is marked by strong aridity and weak and irregular rainfalls. These make many approaches to agricultural cultivation unfeasible and dependent on infrequent rainfall. In these contexts, oases are critical ecosystems for supporting agrosecurity. Oases are important socio-agro-ecosystems providing economic, ecological, social and cultural services throughout the world's drylands. Moroccan oasis agro-ecosystems cover a total area of 115,563 km2 (15% of the country's surface) and are home to over 1.7 million people (5% of the population).

As a refuge for biodiversity, climate regulation, and agricultural products, they are the last line of defence against a progressing Sahara Desert. Moreover, the oases are the most vulnerable ecosystems to climate change, according to the UN intergovernmental panel on climate change.

Morocco has lost a third of its oases in the last century and their disappearance comes at heavy environmental, economic, social and cultural costs.

Technical Assistance

The project has received Technical Assistance from the SCF for a Feasibility Study. The objectives of the study were to:

- Facilitate access to commercial markets for smallholder farmer production, and to improve the quality of dates produced by these smallholders by introducing modern agricultural practices and valuable commercial varieties;
- Enhance oasis agro-biodiversity and sustainable production allowing farmers to participate in value chains for portfolios of products from diversified farming systems; and
- Capture a premium for Small Producers who can demonstrate sustainable management practices and strengthen cooperatives by helping them to achieve certifications.

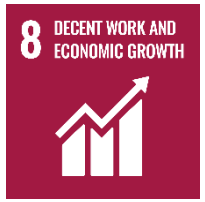
The findings of the study clearly indicate that establishing a packing house to vertically integrate the dates' value chain would greatly benefit smallholders and the rural communities in the region.

The study also identified several challenges faced by the Moroccan date industry related with climate change, the production chain, field operations, storage, processing, and marketing. The study emphasizes the importance of social impact interventions to address the fundamental needs of the local population and highlights how women play an essential role in the date value chain but face low decision-making power and limited access to resources. Finally, the study suggest a biodiversity concept to be implemented in the central farming assets to increase the number of plant species and increase nutrient cycling, soil structure and water retention.

OUR IMPACT

SDG 5: Gender Equality

The project intends to provide financial training workshops, as well as social and financial services, to empower female entrepreneurs. The project will involve the development of a Gender Action Plan, improving employment opportunities for women within the oasis areas. These programs will be implemented in collaboration with local cooperatives and community leaders to maximize outreach and impact to women in stakeholder communities.



SDG 8: Decent Work and Economic Growth

The project expects to create a variety of employment opportunities in remote rural areas, improving and diversifying the sources of income for vulnerable households living in and relying on oasis agroecosystems. Diversity in income flows could bolster community resilience in face of expected climate-induced challenges. The project also aims to educate community members by targeting youth in schools and providing training in soft skills and entrepreneurial practices. In particular, the project plans to have a circular, locally-integrative economic impact by developing a program to deliver training and corresponding diplomas to young people on date cultivation techniques.

SDG 13: Climate Action

The project promotes a climate-resilient farming approach that utilizes sustainable cultivation and biomass sequestration opportunities across the production chain. This includes cultivating dates, almonds and olives via a sustainable agroforestry model, utilizing organic fertilizer, and sequestering carbon in biomass and soil (estimated 200,000 tCO2e over the project lifetime of 30 years). The project also aims to increase climate resilience by restoring unvegetated land. The plantation uses innovative technology for wells, pumps, storage and drip irrigation connected to water ponds filled with groundwater, to allow for efficient water usage.

Agriculture

South Africa
TERRAGRN

South Africa: Agroforestry

Overview:

SCF is providing technical assistance to TERRAGRN, a private sector enterprise cultivating & operating large biodiverse agroforests. In South Africa, over the next 5-6 years, TERRAGRN aims to grow an agroforest on approx. 200,000 ha on unutilized land in Mpumalanga, a major coal mining province, with the objective to create new jobs and to produce green energy.

The agroforest will include:

- 40% bamboo plants (non-invasive, clumping varieties) to produce pellets, pulp, biochar and activated carbon for industrial customers.
- 40% fruit trees and food/ cover crops (citrus fruits, olives, apricots, pecan nuts, cereal crops for community sustenance and commerce).
- 20% other indigenous trees

The forest would be FSC, SBP and PEFC certified.

Bamboo is widely recognized as an effective & highly renewable tool for climate change mitigation (it emits 35% more oxygen than other plants and absorbs 40% more CO2). It also has a good potential for generation of thermal energy and electricity through gasification (comparable to wood + timber).

South Africa: Agroforestry

The challenge:

In South Africa, deforestation is a growing concern, driven by unsustainable logging and the conversion of forest lands for agriculture or urban development. This not only leads to biodiversity loss and soil degradation but also worsens the impact of climate change. At the same time, the country faces energy challenges, with a heavy dependence on coal, which contributes to carbon emissions and further environmental harm.

Terragrn addresses these dual challenges by promoting bamboo as a sustainable solution. Bamboo's fast growth and ability to regenerate make it a viable alternative to traditional timber and a renewable biomass source for energy production. By converting bamboo into bioenergy, Terragrn reduces the reliance on coal and helps provide a reliable energy source for South Africa, while simultaneously contributing to forest conservation and climate resilience. This integrated approach fosters both environmental sustainability and energy security for the region

Feasibility Studies:

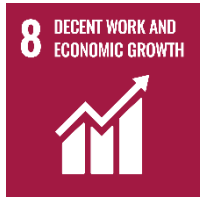
The Feasibility Study assessed the use of raw bamboo feedstock (e.g. Chips) to produce electricity through a down-draft gasification process.

So far, bamboo has been typically used for combustion processes in boilers (in the form of pellets). Combustion technology is typically used for electricity production on a larger scale (+ 10 MW) while gasification technology is used for smaller scale electricity production (less than 1 MW). TERRAGRN believes that gasification technology has a very strong potential for electricity production. In the long-term, the project will aim to produce and export 50% pellets for combustion and 50% of raw feedstock for gasification, depending on market conditions.

Study Contents:

- Fuel characteristics of raw bamboo as feedstock in gasification.
- Evaluate all aspects of gasification performance: compare to conventional feedstock and other gasification methods used internationally, report on gasification efficiency, reference to any international emission standards.
- Analyse characteristics and efficiency of biochar produced per process of cycle of gasification on a 100 kg per hour capacity setup.
- Set-up & document process for electricity production, analyse and report on heat/energy loss, report on inefficiencies that could be observed in industrializing the gasification process for higher capacities.
- Confirm type of generator engines that could be used.
- Demonstrate working process to the TERRAGRN team and partners.
- Prepare brief background and scale of projects previously executed for TERRAGRN to share with their partners and investors (purpose of project e.g. heat production, heat and electricity or coupled with cooling systems, etc.).

OUR IMPACT



SDG 7: Affordable and Clean Energy

The project is expected to produce 1.8bn KWh/y of renewable energy.

SDG 8: Decent Work and Economic Growth

The project should create 50,000 new jobs in the agroforestry sector in rural areas of Mpumalanga province by 2030, including 10,000+ new jobs across bamboo value chains (plant tissue culture facility, downstream manufacturing, logistics), etc. The project should hire 300 local women as entrepreneurs to lead forest development & operations.

SDG 11: Sustainable Cities and Communities

Increased agricultural productivity should enable additional incomes for small-scale food producers due to increased rainfall, improved soil health, soil structures and soil nutrients.

SDG 13 Climate Action

We expect the project to allow for the sequestration of approx. 300 million t of CO2 from 2023-2050, average of 10 million t/y.

Additionally, Bamboo pellets are expected to reduce the use of coal if co-fired in industrial coal boilers or replace wood pellets in pure biomass boilers. Black pellets can be used in cement sector to substitute coal with biomass in kilns.

RENEWABLE ENERGY

Renewable energy

Albania: Utility Scale Solar

Albania: Solar

Overview:

SCF is considering investing in a utility scale Solar Photovoltaic project located in the southern region of Albania, an area with high solar irradiation potential. The project was awarded the right to build c.65MWp Solar Photovoltaic power plant in the recently announced 300MW Solar Photovoltaic auction run by the Ministry of Infrastructure & Energy.

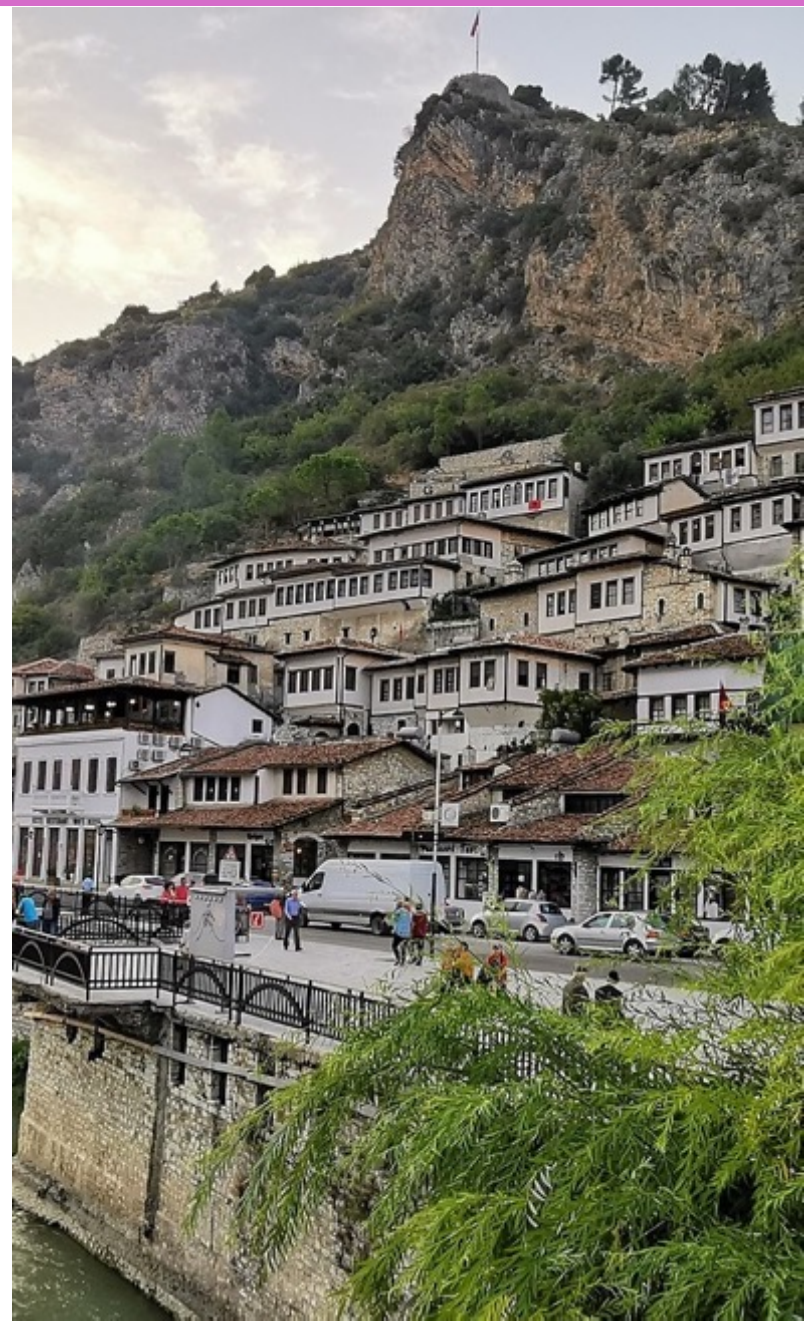
Given Albania's reliance on hydropower (approximately 95% installed capacity) and energy imports (between 30% and 60%), this project is expected to provide energy diversification to reduce the significant hydrology risk and improve energy security.

The challenge:

Due to supply chain issues, rising energy prices, and the war in Ukraine, energy independence and security have become critically important across Europe. Albania, which heavily relies on energy imports, has seen import levels reach up to 60% of its electricity mix, with recent figures ranging between 25% and 30%. These imports significantly limit economic growth, negatively impact the trade deficit, and leave the country open to supply shocks.

In addition, hydropower represents approximately 95% of the installed electricity generation capacity in the country. As such, Albania faces significant hydrology, rainfall and climate change risks resulting in significant fluctuations in energy generation and an increased need to import electricity at a premium.

Diversification to other renewable energy sources will help reduce this strategic dependence on imports , enhancing the country's energy, political, and macroeconomic security. This large-scale solar photovoltaic project is well-positioned to support these goals.



SCF has provided TA for the project in the form of a pre-feasibility study and ESIA

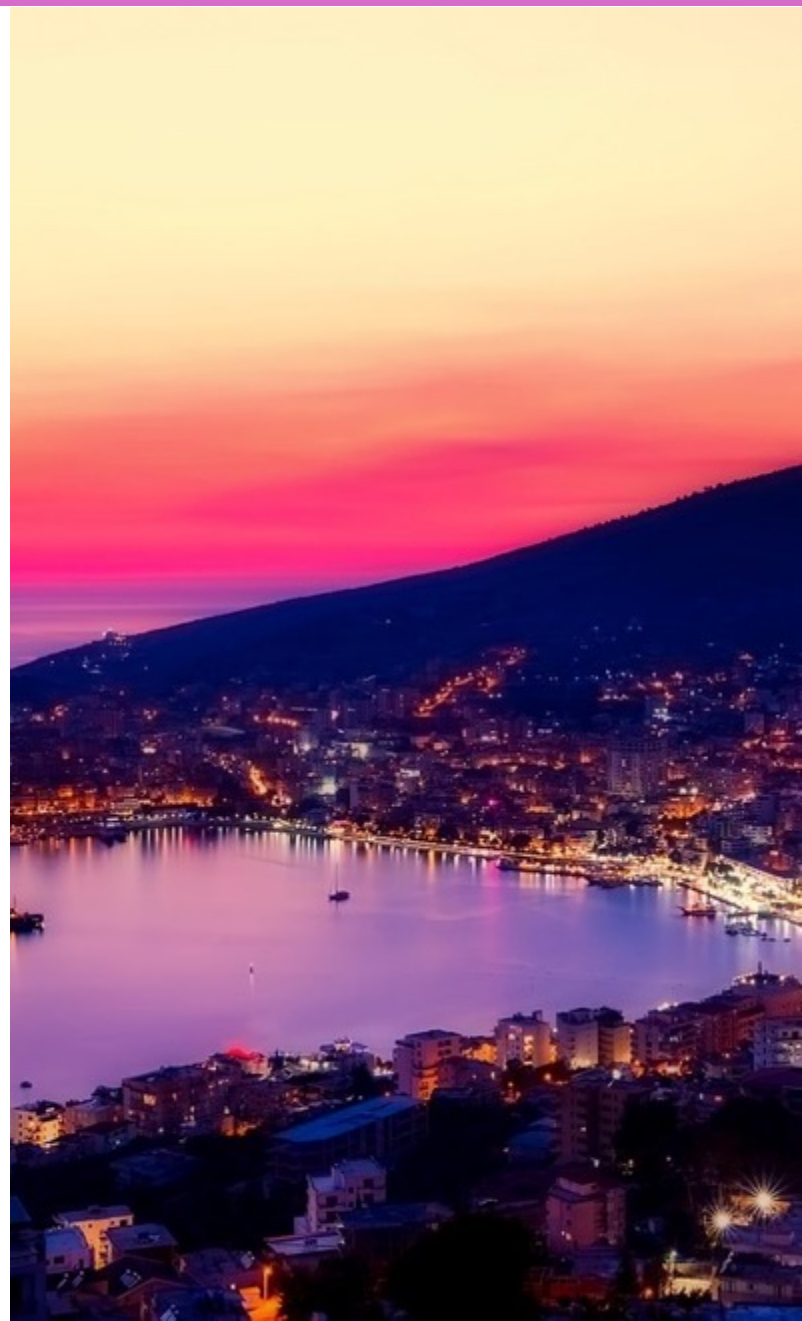
Proposed Investment

SCF has partnered with a local partner and an international renewable energy engineering & asset management company for the construction and operation of this Solar PV Project.

Technical Assistance:

Pre-feasibility Studies: Grid Emission Factor study, including imported energy.

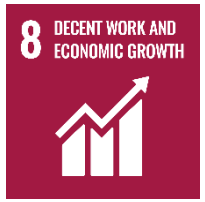
ESIA: The ESIA served to identify potential environmental and social risks of the project, under relevant frameworks including International Finance Corporation (IFC) Performance Standards and Gold Standard Safeguards.



OUR IMPACT

SDG 7: Affordable and Clean Energy

We expect that the anticipated financed installed capacity will generate 346,279 MWh of clean and affordable energy per year; based on the planned capacity and average direct normal irradiation per day.



SDG 8: Decent Work and Economic Growth

During its entire operating period, the project is expected to create direct and indirect employment opportunities for the local population for its development, construction, and operating activities. SCF's investment should also support knowledge transfer and in-house training for local employees.

We anticipate that the project will provide diversification to the Albanian grid, and in turn reduce the strategic dependence on imports and improves energy security. Indeed, access to affordable energy is expected to reduce energy imports (imports have been priced at a premium which negatively impacts economic growth, the trade deficit and increases the risk of supply shocks). The project should also reduce hydrology risk which causes significant fluctuations in energy production.

SDG 13 Climate Action

The production of renewable energy aims to offset Albania's energy imports.

Renewable energy

Albania, North Macedonia, Montenegro: Zvilo

Balkans: Green Lending & financing platform

Overview:

SCF has provided technical assistance to a green lending and financing platform expanding its operations to the Balkans. The loans will facilitate clean energy production, particularly solar energy, in the Balkans, aiming to provide 346 MW of solar replacement capacity.

The Challenge:

The Balkans are at a critical juncture of shifting to renewable energy and governments of North Macedonia, Montenegro and Albania have taken serious commitments to battle climate change and promote green economy and technologies. However, the adoption of green lending products has been limited so far by:

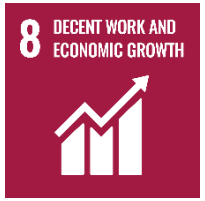
- Consumer behaviour
- Low rate of renewable infrastructure (e.g. electric vehicle charge ports)
- Lack of government policies and funding
- Limited knowledge regarding the gathering and reporting of ESG data from borrowers

Technical Assistance

SCF TA has supported the platform's expansion to the Balkans through a market study focusing on Albania, North Macedonia, and Montenegro. The study assesses the legal framework a market for green lending products in these countries, with a focus on the energy market.

SDG 5: Gender Equality

The platform intends to provide 20% of its funding for women led or owned enterprises. In the gender gap index 2023, Montenegro scored 0.714, North Macedonia 0.711 and Albania scored 0.791, indicating that women were 28.6%, 28.9% and 20.9% less likely to have equal economic participation and opportunities than men.



SDG 8: Decent Work and Economic Growth

The project is expected to create more jobs for local solar producers, reduce energy costs and improve cash flows for corporate retailers and SMEs, allowing them to invest extra cash into growth and bigger workforce to enable this. This will also stimulate competitiveness and help to modernise the regional economy.

SDG 13: Climate Action

The platform's green loans aims to enable a substantial reduction in CO2 emissions (estimation TBD), as the 346MW of solar panels will replace the need for reliance on Balkan coal-powered electricity, which has the highest emissions in Europe. This will help improve air quality and indoor living standards, reducing harmful emissions, increasing energy supply security, etc.

Renewable energy

Brazil: Solar

Overview:

SCF has provided technical assistance for a project in Brazil for Roof-top and potentially ground-mounted solar, with an expected capacity of 150MW.

The challenge:

Brazil is largely dependent on fossil fuels and large-scale hydropower. The country is at continuous high risk of power outages due to water crisis and high dependency on large-scale hydro.

Technical Assistance

The project has received Technical Assistance from the SCF for a pre-feasibility study with the objectives to:

- Gain a better understanding of Brazilian macro risks for this and further projects as well as understand the Brazilian energy market dynamics.
- Evaluate both the risks and potential benefits of the project, particularly in relation to macroeconomic and market-specific challenges.

OUR IMPACT

SDG 11: Sustainable Cities and Communities

The project is expected to boost economic activities and reduce pressure on the national grid through the high renewable capacity of decentralized solar power generation. Currently, Brazil imports fossil fuels from Central America, the U.S., and even Nigeria.

SDG 13 Climate Action

The project aims to reduce CO2 emissions by replacing fossil fuels and diversifying energy production away from an over-reliance on large-scale hydro. Additionally, it intends to lower emissions associated with the logistics of transporting fossil fuels, as well as the construction and maintenance of hydropower plants.

Renewable energy

Chile: Green Hydrogen

Chile: Green hydrogen production

Overview:

The SCF's Technical Assistance Facility has commissioned a market study to analyse the current challenges and barriers to green hydrogen production in Chile, which has the potential to decarbonize energy-intensive industries and electricity production in the region and beyond.

It is estimated that Chile could produce up to 160 megatons of green hydrogen per year and become the leading low-cost exporter by 2040.

The need for a market study emerged from SCF's conversations with the developer of a green hydrogen project in Chile's Antofagasta region, where many green hydrogen projects are currently under development, but only a handful have gone past the pre-feasibility stage.

The report provides robust information for a potential future engagement of the SCF in the Chilean green hydrogen industry.

The challenge:

Green hydrogen (GH2) has become a topic of growing interest in the transition to a low-carbon and sustainable economy. It is produced from renewable energy such as wind, solar, hydroelectric, or biomass, through a process of water electrolysis that does not generate greenhouse gas emissions.

Due to its versatility and ability to significantly reduce carbon emissions in hard-to-abate sectors, such as heavy industry and transportation, green hydrogen has become a key pillar in achieving decarbonization and climate neutrality goals.

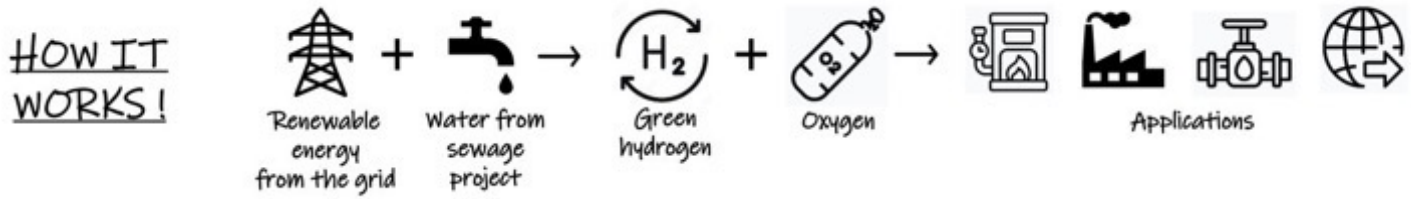
However, despite its promising potential, the widespread deployment and adoption of green hydrogen face several challenges that are important to analyse in detail, including **costs, infrastructure, regulatory framework and policies, and funding.**

Chile: Green hydrogen production

The SCF has conducted a pre-feasibility study to assess the market dynamics, current challenges/barriers, and potential for green hydrogen in Chile.

Chile is currently embarking on an ambitious journey to become one of the world's leading producers of green hydrogen and its derivatives while striving to ensure that its production is highly competitive in terms of costs. The National Hydrogen Strategy stands out, aiming to achieve a cost of $1.5 USD/kg of hydrogen by the year 2030.

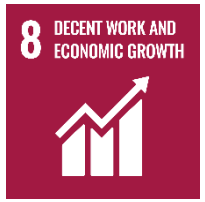
The interviews that were conducted with stakeholders across industry, academia and investors in the context of the market study provided valuable insights into the landscape of green hydrogen, addressing essential matters such as the current market situation, existing regulations, permitting processes and the supply chain.



OUR IMPACT

SDG 7: Affordable and Clean Energy

The paper suggests that Chile could achieve its goal to provide green hydrogen at a price lower than $1.5 USD/tonne by 2030 and at a price lower than $1 USD/tonne by 2050, in the north and south regions using solar and wind sources respectively.



SDG 8: Decent Work and Economic Growth

The paper identifies key locations and industries in Chile with the greatest potential for developing green hydrogen sectors, such as utility providers and the mining industry, along with the related job opportunities.

SDG 13 Climate Action

The paper estimates that green hydrogen is considered to help mitigate 21% of Chile’s emissions by 2050.

Renewable energy

Dominican Republic: Solar

Dominican Republic: Perla de Bayaguana Solar Park

Overview:

The SCF will provide technical assistance for a solar park project in the Dominican Republic. Through the creation of a low-carbon energy supply with integrated battery storage, frequency control, and the expansion of the necessary network infrastructure, the project aims to address the challenges in the Dominican Republic's energy market and contribute to the government's strategy for a green energy transition.

The Dominican Republic is one of the fastest-growing economies in Latin America; however, energy supply and security remain significant bottlenecks to economic growth and sustainable development.

The majority of the Dominican Republic's energy supply is derived from fossil fuels, including oil, natural gas, and coal, which account for around 83% of electricity production. The remaining 17% consists of low carbon/renewable sources such as wind, solar, hydropower, and bioenergy.

Dominican Republic: Perla de Bayaguana Solar Park

The challenge:

The dependency on oil for electricity generation in the Dominican Republic represents a high-cost factor and an obstacle to achieving its climate goals.

Although most of the population is connected to the grid, the current mix of centralized power generation via conventional power plants and decentralized diesel generators does not meet the necessary energy demand. As a result, a significant portion of the population often has limited access to electricity due to supply shortfalls, leading to blackouts.

Additionally, the lack of frequency control and the non-harmonized grid feed-in of energy based on daytime demand contribute to further supply instability. The population and industries often rely on private diesel generators, which are expensive, harmful to the environment, and cause noise pollution.

Technical Assistance:

The SCF's Technical Assistance Facility is going to provide grants to support this project in the form of ESIA study and ESMP study.

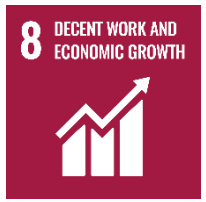
OUR IMPACT

SDG 13 Climate Action

The project is expected to contribute to climate mitigation - estimation of 189,600 avoided tCO2 emissions per year by mitigating power generation from mostly fossil fuel-powered electricity sources.

SDG 7: Affordable and Clean Energy

This solar project is estimated to generate around 445,200 MWh per year of clean and affordable energy, which can provide diversification to the DR grid and reduce the strategic dependence on imports of coal, gas and oil.



SDG 8: Decent Work and Economic Growth

The project aims to create direct and indirect employment for local communities during construction and operation phase, meanwhile, providing knowledge transfer and in-house training for local employees..

Renewable energy

Mexico: Luxun

Mexico: Renewable Energy

Overview:

As of June of 2024, SCF has invested $17.2m in Grupo Luxun, a leading Mexican renewable energy company that offers turn-key, rooftop solar energy installations for businesses and enterprises without up-front investments. The company has a four years track record in distributed generation (<500kW of capacity), providing Power Purchase Agreements, leasing and long-term financing for the commercial & industrial (C&I) Sectors. The companies are involved across all steps of the value chain from marketing, development, procurement, construction (supervision), operation and asset management.

The challenge:

Mexico's electricity mix is dominated by oil and gas, accounting for approximately 70% of total generation. Mexico has a constant growing electricity sector, with demand increasing on average by 1.6% per year since 2000.

Distributed generation (DG) solar projects can help Mexico reduce its reliance on fossil fuels and avoid emissions. They are smaller and less regulated, with a threshold of 500 kilowatts – enough to power about 200 households.

In addition, it will contribute to the generation of direct and indirect employment and skills development in the communities, given that there will be multiple installations across the country.

The project has received technical assistance from the SCF in the form of an Environmental & Social Impacts Assessments (ESIA), an Environmental and Social Management Plan (ESMP), and an Environmental and Social Action Plan (ESAP) as well as the evaluation of the principles and safeguarding requirements of the Gold Standard for the Global Goals.

Investment

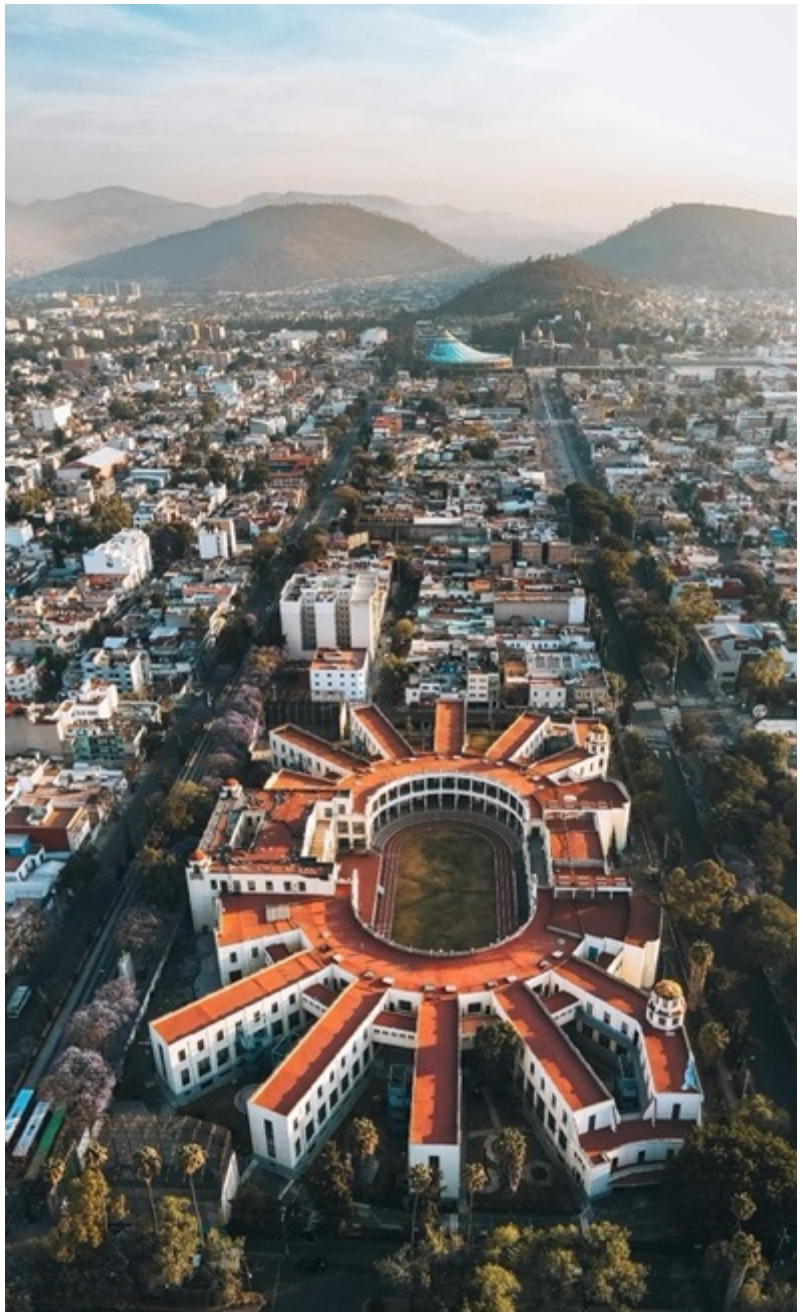
Pegasus has planned up to USD 43 million over five years to finance the construction of more than 160 MW of solar panel and battery storage projects.

ESIA

The ESIA served to identify potential environmental and social risks and impacts arising from Luxun's activities at the company level. The methodology observed the International Finance Corporation (IFC) Environmental and Social Sustainability Performance Standards and the General EHS Guidelines, Gold Standard standards, as well as other applicable international best practices.

ESMP

Based on the findings of the ESIA, an ESMP was prepared for the prevention, mitigation, and performance improvement measures, processes, and procedures to address the identified ES risks and impacts.

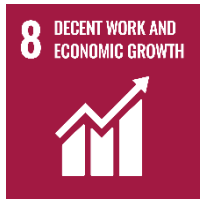


OUR IMPACT

SDG 7: Affordable and Clean Energy

The project aims to generate 256,000 MWh of clean and affordable electricity for industrial and commercial use per year.

SDG 8: Decent Work and Economic Growth



The project is expected to create direct and indirect employment and skills development in the communities, given that there will be multiple installations across the country. Integrate more women into processes, such as in the operation and maintenance phase.

Additionally, we expect that the reliable supply of electricity at a constant and cheaper tariff will attract more companies to Mexico as a nearshoring effect supporting the growth of the Mexican economy.

SDG 13 Climate Action

From 2027 onwards we aim to avoid 119,311 tons of CO2 emissions per year by replacing power generation from primarily coal-powered electricity sources.

Renewable energy

Nigeria: Sosai

Overview:

The SCF is providing technical assistance to a solar energy project in northern Nigeria, applying solar mesh grids and mini-grids with regular maintenance and a technology-driven fault monitoring system.

Aligning with the expanding scale of solar-powered mini-grids in recent years, the reduced equipment costs and increased panel efficiency make such infrastructure a critical solution for affordable electricity in Nigeria.

The project aims to develop a significant amount of solar mini-grids to reach nearly 64 communities in rural northern areas, including household consumers, commercial users, and public users (schools, hospitals, etc.).

By installing a solar panel, a battery, and a Pod in every house/building, the technology-mesh grids can generate solar energy, connect close neighbors, and redistribute the energy efficiently and reliably.

The challenge:

As the largest off-grid population on the African continent, with millions of people lacking access to grid electricity, the lack of capacity in the grid-connected sectors is a big challenge for Nigeria.

The national grid is not able to expand access outside of the current network infrastructure in the short term. To achieve universal access to electricity by 2030, Nigeria would need to connect between 500,000 to 800,000 households per year.

With an installed power capacity of 16,384 MW, the current electric system is only able to dispatch around 3,500 MW on most days. As a result, approximately 66% of Nigerians are currently unserved or underserved by the national grid.

Technical Assistance:

To further support the development of this project, the SCF's Technical Assistance Facility is commissioning a feasibility study to conduct:

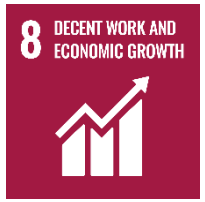
- The Nigerian Electricity Regulatory Commission (NERC) and Rural Electrification Agency (REA) registration.
- The Nigerian Electricity Management Services Agency (NEMSA) inspection.

The SCF's Technical Assistance Facility is also commissioning an Environmental and Social Impact study to conduct stakeholder consultation with the communities.

OUR IMPACT

SDG 5: Gender Equality

The project expects to improve cooking conditions with less air pollution and manual labour, increase household savings, enable business opportunities, and create direct jobs (at least 40% for women under project policy).



SDG 8: Decent Work and Economic Growth

The employment rate in Nigeria is forecasted to be 82.02% in 2024. Meanwhile, some employed Nigerians are “underemployed”, which means that they work less than 40 hours per week but declare themselves willing and available to work more. The project is expected to:

- Create 400 jobs for both construction and operational positions
- Generate economic opportunities for women in covered communities at a projection of US$ 13.5 million, and across both genders at over US$34 million, by year 10 of operations.

SDG 13 Climate Action

The project is a critical solution to provide efficient and renewable solar energy to rural areas and reduce the reliance on distributed fossil-fuel based generation. The project is expected to avoid approximately 50,000 tonnes of CO2e per year by reducing obtaining electricity from fossil fuels

Renewable energy

Senegal: Walorise

Senegal: Bioenergy

Overview:

The SCF is providing technical assistance to Walorise, an initiative that aims to restore and preserve the biodiversity of the Senegal River Valley and promotes a regenerative agriculture and sustainable energy by turning *Typha australis* (an invasive plant) into bio-energy

The challenge:

The exponential proliferation of the reed Typha Australis in Senegal has invaded a large part of the Senegal River limiting fishing and farming areas, threatening biodiversity, and affecting the livelihoods of local populations.

In terms of health, this leads to an increase in water borne diseases with an increase in the number of people affected (urinary and intestinal bilharzia).

The available biomass from Typha Australis is estimated at more than three million tons in the valley of the Senegal River, providing the potential to produce 42 MW of clean electricity.

Biochar and digestate are two other promising uses of *Typha australis* whose combined properties can be harnessed for plant nutrition, soil regeneration and carbon sequestration while ensuring local production.

Senegal: Bioenergy

The project has received Technical Assistance in the form of a Pre-feasibility Study of Typha potential (mapping according to volume/ha), productivity t/ha/year in the project site.

The goal of this project is to have positive environmental and social benefits through the maximizing of waste recycling and creating a reliable energy source. This study will cover, 2 components with the following objectives:

White paper on the use of Typha

- Draw up a summary of the current state of knowledge concerning *Typha australis* and, especially, its proliferation in the area.
- Gathering data and analysing existing experiences of projects using *Typha australis* to produce bioenergy and organic fertilisers in Senegal

Case Study of the Lac de Guiers sites and the left bank of the Senegal River

- Evaluate the quantity of Typha that can be harvested from these two sites with a view to setting up bioenergy plants in Senegal.
- Analyse the sampling areas, particularly with regard to the specific features that may affect Typha collection (e.g. water depth).
- Identify and estimate the ecological risks associated with mass Typha harvesting.
- Analyse the logistical aspects of harvesting, drying and transport to processing platforms, taking into account the costs associated with these operations.

OUR IMPACT

SDG 5: Gender Equality

Senegal scored 0.67 in the economic participation and opportunity area of the gender gap index in 2022, and 98% of women are employed informally.
Walorise is expected to provide jobs for women and integrate women's groups into the commercial distribution of organic fertilizers to family farms

SDG 8: Decent Work and Economic Growth

The World Bank predicts that Senegal's economy will grow by 10.5% in 2024, the most out of any sub-Saharan African country, although unemployment remains high at 22%. Employment in Senegal is generally informal (over 95%) indicating potential income security issues for many people.

The project aims to create 120-150 formal jobs and provide training for local communities

SDG 13 Climate Action

The project is expected to:

- Avoid GHG emissions by providing a non-fossil fuel energy source from waste biomass.
- Production of biochar would sequester 115,000 tonnes of CO2e annually, based on 50,000 tonnes of biochar produced (2.3 tonnes of CO2e per tonne of biochar)

Renewable energy

South Africa: Eskom

South Africa: Renewable Energy

Overview:

SCF received a proposal for a renewable Distributed Generation (DG) platform in South Africa that provides power to private offtakers by utilising the National (Eskom) or Municipal transmission infrastructure ("wheeling").

The project is expected to produce 192,000 to 216,000 MWh/yr of renewable energy and contribute to decarbonizing South Africa's power production which still relies heavily on coal fired power plants.

The challenge:

The power supply from the public utility, Eskom, is highly polluting and unstable due to its deteriorating generation, distribution, and transmission infrastructure. This leads to frequent load shedding, where electricity distribution is reduced or halted temporarily. This poses a risk to wheeling projects, as off-takers may not receive electricity even when the plant is operational.

Additional challenges with independent power production and distributed generation projects include:

- Potential legal and other risks due to undeveloped market for distributed generation and wheeling as regulation develops further
- Continuous currency depreciation with bouts of higher volatility over the last 5 years

Technical Assistance

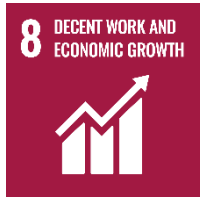
The SCF TA has committed a full package of pre-feasibility, feasibility and ESIA towards this nation-wide, ESKOM-led project. This TA package is a co-contribution, together with DBSA, the country's development bank, and AFD, the French development institution, towards the large feasibility assessment requirement of the project.

OUR IMPACT

SDG 7: Affordable and Clean Energy

The project is expected to produce between 192,000 to 216,000 MWh of renewable energy each year.

SDG 8: Decent Work and Economic Growth



Greater development of the wheeling market can provide employment and skills development to improve the livelihood of the local population. It also promotes increased economic activity and reduces pressure on the national grid through the high renewable capacity of decentralized energy generation.
More broadly, it may facilitate the country's economic growth by supporting productive uses of power that generate income and provide a pathway out of poverty through an improved power supply.

SDG 13 Climate Action

Wheeling markets have the potential to reduce CO2 emissions by facilitating the independent production of renewable electricity and replacing coal and gas fired power stations.

WASTE & WATER MANAGEMENT

Waste management

Cambodia: GAEA

Cambodia: Waste Management

Overview:

SCF has funded a feasibility study for sorting and composting plants In the Cambodian cities of Siem Reap, Banteay Meanchey, Kompong Thom and Phnom Penh The project developer would like to modernise trucks as well as sorting and composting facilities to improve waste collection operations and sustainability.

The challenge:

Currently, Cambodia produces 10,000 tonnes of waste daily but waste collection remains largely informal, resulting in unsustainable practices.

In Siem Reap, for instance, it is estimated that 70% of residents burn their waste or dispose of it in public areas, leading to pollution of the air and waterways.

70% of waste generated in Cambodia is organic, which leads to methane emissions from dumpsites due to insufficient recycling procedures/infrastructure and the lack of a market for recycled materials and products

Cambodia: Waste Management

The full technical and economic feasibility assessment of the project specifically assessed:

- Technical feasibility of producing outputs from the sorting plant and composting plant that can meet the quality and quantity requirement of off-takers, buyers and end-users. This involves the assessment of the Municipal Solid Waste amount as feedstock and the assessment of the plant design as a whole as well as each component (i.e. sorting, composting).

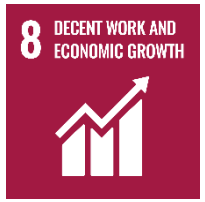
- Economic feasibility of the business model, including sensitivity analysis and contingency planning (in case of variation of input amounts and composition, and other risks that need to be considered), validation of civil works and its associated cost (if needed, provide cost refinement).

Development of a concept and plan on how informal waste pickers could be integrated into the project to ensure social acceptability of the project and sufficient feedstock.

OUR IMPACT

SDG 5: Gender Equity

The project aims to provide formal work opportunities for local women. 45% of the new positions are intended for women.



SDG 8: Decent Work and Economic Growth

90% of the Cambodian workforce is informal. When it comes to waste management, many people earn income by informal picking at landfills which also has safety issues.

The project is expected to create 100 jobs associated with better waste management procedures, such as collection, transport and sorting activities.

SDG 13: Climate Action

An estimated 50-70% of the municipal waste generated in target regions (2021) was not collected – instead, it was typically burnt or ended up in waterways.

The project intends to avoid GHG emissions and negative impacts on air quality by preventing the burning of such waste and implementing better waste management procedures to prevent methane emissions. Pollution to waterways would also be mitigated.

Chile: Waste Management

Chile: Waste Management

Overview:

The SCF has provided technical assistance to a waste management project in the Maule region of in Chile. The project is expected to treat 110,000 t/y of mixed municipal solid waste and pure organic waste from the nearby agricultural industry.

Currently, municipal solid waste and agricultural waste in the Maule region end up on landfills.

The challenge:

Chile has made great progress, but faces significant challenges in developing its renewable energy infrastructure

- In 2022, over 50% of Chile’s electricity from clean energy sources, with wind and solar accounting for more than 26% of the country's electricity generation that year.
- Nevertheless, Chile is facing grid instability issues due to the variability of renewable energy sources and requires more stable generation solutions.

Chile: Waste Management

The project has received Technical Assistance from the SCF for a pre-feasibility study

The objectives of the study is to:

- Understand the regulatory requirements and public contract granting processes of waste anaerobic digestion plants in Chile
- Understand the market and regulatory requirements on fertilizer, compost and biomethane in Chile

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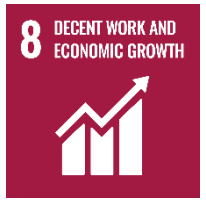

SDG 8: Decent Work and Economic Growth

Create job opportunities and provide a predictable living wage for local people dependent on seasonal work in tourism.

SDG 11: Sustainable Cities and Communities

Livelihood of the communities would be improved by getting rid of open landfills and the risks they pose for the local population.

SDG 13: Climate Action

Mitigation of CH4 by preventing MSW and the organic waste from being landfilled, generating electricity that would replace the need to extract fossil fuels.

Waste management

Ecuador: Portoviejo Waste Project

Ecuador: Waste Management

Overview:

SCF has provided technical assistance to a Waste Management Infrastructure in Portoviejo, Ecuador. The sorting plant aimed to treat 150,000 tons of waste per year.

The Municipality of Portoviejo is situated 30 kilometers from the Pacific coast and is the capital of Manabi province. The municipality wants to develop a 70-ha plot of barren land called “La Solita” to build a modern waste sorting plant for Portoviejo’s growing quantity of MSW, which is currently being landfilled under unsanitary conditions. With 350k-400k inhabitants and a thriving agricultural-processing industry, good road connections to Quito and Guayaquil, Portoviejo is the main political and economic centre of the Portoviejo River valley.

The challenge:

50% of Ecuador’s municipalities dispose of their waste in temporary cells or open dumpsites.

The National Waste Management Program 2010-2021 (PNGIDS) aims to eliminate open dumpsites in all municipalities in the country. However, currently 45.7% of municipalities have landfills, while 28.8% still dispose of their waste in temporary cells and 25.6% in open dumpsites or ecosystems. In 2021, there were still 144 open dumpsites and 77 landfills in Ecuador.

Additionally, informal recycling dominates : Only 6% of MSW is formally recycled nationwide. Recovery of recyclable materials is performed by the informal sector. There are around 20,000 informal and formal waste pickers in Ecuador.

Ecuador: Waste Management

The project has received Technical Assistance in the form of an Environmental and Social Impact Assessment (ESIA) and Feasibility Study.

Feasibility Study focused On:

- Full technical and economic feasibility assessment of the entire project.
- Development of a concept on how informal waste pickers could be integrated into the project to ensure social acceptability of the project and sufficient feedstock (E&S Risk 3).
- Assessment of the feasibility of meeting regulatory requirements for emission levels from combustion of RDF combustion in cement plants in Ecuador (E&S Risks 1, 2 and 3).
- Assessment of the feasibility of using renewable energy for the power supply (E&S Risk 2).
- Assessment of the feasibility of a Nature Based Solution component.

ESIA focused on:

- Reviewing the existing environmental impact assessment (which is in Spanish) based on the IFC Performance Standards and World Bank EHS Guidelines, and SCF's safeguards and stakeholder policies.
- Identifying gaps and additional information needed. Based on this gap analysis, assess the environmental and social impacts of the construction and operation activities.
- Reviewing the current Action Plan which is part of the existing environmental impact assessment and updating it based on the gap analysis and additional information.

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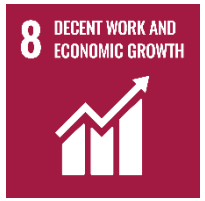

SDG 8: Decent Work and Economic Growth

New jobs will be created at the plant (e.g. manual sorting of waste, administration and security of the plant).

SDG 11: Sustainable Cities and Communities

The quality of life will improve due to better waste management, and income levels are expected to rise as a result of increased economic activities.

SDG 13: Climate Action

Methane emissions, caused by the decomposition of organic waste in landfills, will decrease as less unsorted MSW is sent to the landfill.

Additionally, reducing the volume of MSW that is disposed of in unsafe, open pits with open burning will lead to lower emissions of heavy metals, dioxins, furans, hydrochloric and sulfuric acids, nitrogen oxides, carbon monoxide, and unpleasant odors.

Waste management

Indonesia: Bali Plastic Neutral

Indonesia: Bali Plastic Neutral

Overview:

The SCF is providing technical assistance to a plastic waste management project in Indonesia. Applying a patented thermo-mechanical process in conjunction with shredding and granulating, the project aims to convert non-recycled plastic waste into a lightweight composite aggregate primarily for use in the concrete industry.

The project aims to address Bali's critical challenges of inadequate waste management, mismanaged waste, and overflowing or uncontrolled landfills by developing a scalable ‘Plastic Neutral’ solution. This will optimize the plastic value chain and foster sustainable, localized circular economies.

The challenge:

Bali is currently one of Indonesia’s most popular tourist destinations. Tourism has been the key industry for Bali in the last few decades contributing pre-covid GDP of 61%, which generated significant revenue for Indonesia.

Bali’s population, both resident and tourist generate over 1.6M tons of waste per year, of which 300,000 tons is plastic waste.

Bali’s 10 landfills, growing each year, desperately require a solution to reduce both the incoming waste and the waste already accumulated in them.

Bali’s tropical monsoon climate has two seasons with monsoon rain falling between October to April. These rains flow into 400 waterways and rivers stretching 3,500 km, carrying over 33,000 tons of plastic waste into the ocean.

Pre-feasibility Study

SCF TA has funded a pre-feasibility study for the project including a technology study to review the existing technologies and methods for recycling low-value plastics, including global case studies.

Feasibility Study

SCF TA has funded a feasibility study, looking at:

- Indonesia's national baseline for plastic flows focusing on low-value plastics.
- Analysis of challenges and limitations in recycling low-value plastic waste.
- Review of the existing technologies and methods for recycling low-value plastics.
- Evaluation of site locations, local environment, and weather analysis.
- Analysis of SPV creation, permits, permit planning, and regulatory requirements for the project. according to the national and local laws, regulations, and policies.
- Further study on project capital requirements and financial models: plastic waste feedstocks and any costs/revenue associated with plastic waste, dumping fees, cost of infrastructure that are highly related to the project.
- Analysis of technology, design and engineering, and planning that impact the project from technical side.
- More evaluation of social conditions, environment and weather at a local level.
- Forwards on project team organisation and stakeholder, ESHIA requirements analysis, marketing strategy, and risks analysis and mitigation.

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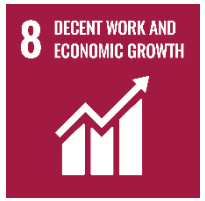

SDG 8: Decent Work and Economic Growth

Employment in Indonesia is mostly informal (over 60%) indicating potential income security issues for many people. The project is expected to:

- Create 50-200 jobs for waste collection and 40-64 jobs for processing operations
- Engage with local pickers to expand collection and provide regular work to improve community income and generate more job opportunities

SDG 5: Gender Equity

The project will encourage, empower and celebrate women leading plastic collectives with equal pay/benefits, and run/manage alternative livelihood programs/micro-financing projects, etc.

SDG 13: Climate Action

The project is a local solution to reduce the impacts of plastic pollution. It is expected to avoid:

- GHG emissions and further CO2 emissions by collecting and recycling waste plastic into useful products and preventing the burning of plastic waste.
- approximately 50,000 tonnes of CO2e per year (based on the recycling of 20,000 tonnes of waste), specific estimates are to be confirmed in further studies.

Waste management

Kenya: Biobuu

Kenya: Biobuu

Overview:

The SCF TA has provided technical assistance grants for Biobuu, an East African Black Soldier Fly (BSF) company that is looking to expand its activities across the continent. The project addresses waste management issues in Kenya with an expected impact on reducing greenhouse gases emissions from organic waste.

As highlighted in our BSF market study, the insect is a promising organic waste treatment method and a potentially significant source of protein for feedstock.

The challenge:

In recent years, Kenya has **experienced a rapid increase in waste generation** due to population growth, urbanization, and changing consumption patterns.

The lack of comprehensive waste management systems has led to environmental degradation, health hazards and 1.4 million tonnes of CO_2e emissions in 2019 alone.

Meanwhile, **feeding a growing population is becoming even more challenging**. The production of meat necessitates substantial resources. The cultivation of animal feed leads to extensive deforestation, endangering various species.

Chicken, pigs, and farmed fish, which constitute significant portions of animal-based protein production, rely on feeds with high protein content.

Presently, this protein is sourced from soy or fish meal, both of which deplete natural resources and are consumed at an unsustainable rate. **BSF protein is a much more sustainable source.**

SCF TA is providing grants for a pre-feasibility study and feasibility studies.

Pre-feasibility Study

The study assessed potential market, buyers, necessary processing in the pharmaceuticals market using BSF chitin and oil.

Feasibility Studies

The studies include:

- Study for 3 new sites in East Africa.
- Design recipe with ideal nutrition for dog food with BSF Larvaes.
- Organic Fertiliser Study.
- Research on-site to increase the breeding and feeding rates of the BSF larvae.

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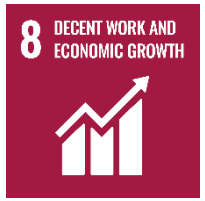


SDG 8: Decent Work and Economic Growth

Currently, Biobuu has 20 staff employed full-time in its facilities in Kenya and Tanzania.

The proposed three additional sites are expected to create 90 new jobs for the local community.

SDG 5: Gender Equity

In BioBuu's current sites, gender balance (M:F) varies between 60:40 and 90:10. In the past, BioBuu has found it hard to motivate women to work with waste.

In accordance with SCF Gender Policy, Biobuu intends to implement measures at all sites to work towards a 50:50 balance.

SDG 13: Climate Action

Use of waste in a BSF-based bioconversion system could reduce greenhouse gas emissions by approximately 50x compared to natural decomposition (EAWAG 2019).

BSF products have lower emissions as a feed product compared to soy meal. BioBuu's processing facilities in Kenya will be partially powered by solar.

Biobuu will select sites with ideal climate condition to avoid dependency on energy input into the facilities or, if needed, it will select sites where the grid is greener.

Waste management

Rwanda: Insect protein

Rwanda: Insect Protein Production

Overview:

SCF is providing technical assistance to a black soldier flies company in Kigali, Rwanda to reduce waste and create a sustainable source of animal feed.

On our global report on black soldier fly (BSF), we mentioned that the insect is a tropical species used for the bioconversion of biowastes and byproducts into marketable, high-value products.

Recent decades have seen the engineering of the natural fly life cycle into commercial operations ranging from basic manual smallholder farms to large mechanical operations.

The larger facilities particularly need to be designed and implemented following a rigorous engineering process according to the available feedstock, product type, and market. Fortunately, in the last few years, many more technology and service providers have entered the market in support of this endeavour.

Rwanda: Insect Protein Production

The challenge:

All waste from Kigali is unsorted and dumped at the Nduba landfill, amounting to 600 tons per day. Of this, 60-70% is organic matter, with 50% deemed usable, resulting in approximately 195 tons of usable organic waste available daily.

Poor diets contribute to the stunting of 33% of Rwandan children, a rate the Government of Rwanda aims to reduce to 19% by 2030, with a focus on increasing the consumption of animal-sourced protein.

Rwanda relies heavily on regional and global food and input imports. Among animal protein sources, eggs are particularly expensive, costing 25% more in Rwanda than in neighboring countries.

Protein sources for animal feed, especially soy, are limited and subject to significant price volatility. Over the past five years, the cost of inputs, particularly soybeans, has risen by nearly 150% in Rwanda.

Rwanda: Insect Protein Production

The project has received Technical Assistance from the SCF for several studies.

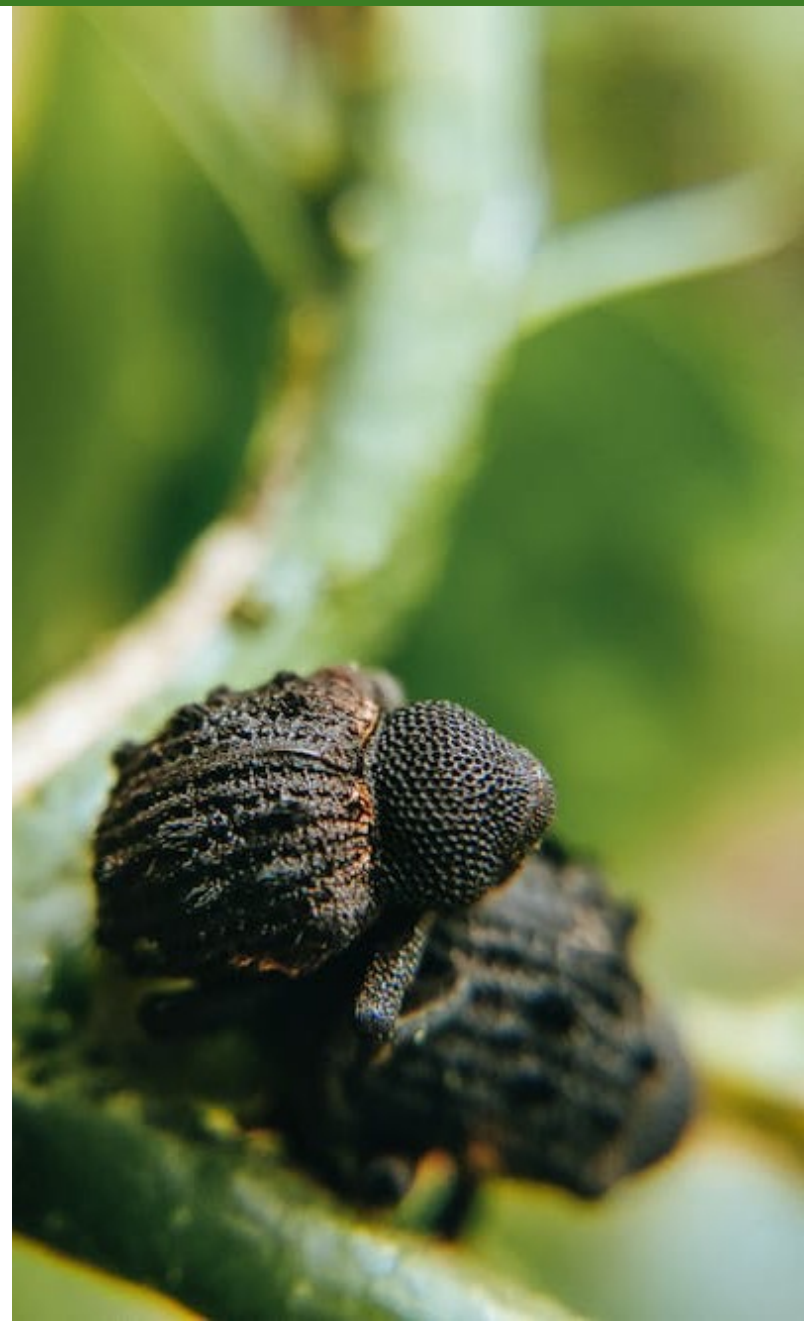
Technological Assistance:

Most agripreneurs on the continent face the challenge of lack of access to technology, know-how and qualified staff, making it difficult to reach scale. Lack of scale results in lack of commercial returns.

Animal protein food producers face limited market access, leading to lower prices and reduced profitability. Replacing conventional feed inputs with a local sustainable alternative protein feed solution is in high demand by local feed manufacturers and in the interest of local consumers in Rwanda.

The SCF TA is providing grants for technical assistance studies for the project:

- A market and regulatory study to map and analyze the supply chains, usage and market entry requirements for organic fertilizer.
- A Waste Feedstock Study to characterise, map and design the supply chains across the various sources (commercial, household, markets).



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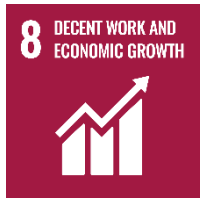

SDG 8: Decent Work and Economic Growth

The project would offer new employment opportunities with the development of a new industry – creating jobs in poultry farming, aquaculture and animal farming and jobs for recyclers.

SDG 5: Gender Equity

Through increased availability and affordability of animal-based proteins, improving nutritional profile of the population of Rwanda, particularly women and children who are at higher risk of nutritional deficiencies. The facility will also aim to have 50% of positions filled by women.

SDG 13: Climate Action

Rwanda's waste sector emitted 0.9 Mt CO2e in 2018. The project could avoid GHG emissions by reducing organic waste disposal at the municipal landfill.

Additionally, BSF products have lower emissions as a feed product compared with soy and fish meal.

Waste management

Senegal: Touba

Senegal: Waste-to-Energy

Overview:

The SCF has provided technical assistance to an Integrated Waste Valorization Center in the holy city of Touba, in order to build a Waste-to-Energy Unit capable of producing and delivering 10MW to the Senegalese national power utility grid.

Using waste as fuel for a thermal power plant solves two other problems faced by countries undergoing rapid and dense economic development:

- It reduces the amount of waste entering landfills and the environment.
- It reduces the imports of petroleum products on which countries' power plants mostly depend, thus reducing carbon emissions.

The challenge:

The city of Touba is located in central Senegal, 194km east of Dakar. It is a fast-growing city and the second most populated Senegalese city after Dakar. Touba is a sacred area home to the Great Mosque of Touba, one of the largest mosques in Africa.

The city's current informal landfill is located on a large water table, where waste burial affects water quality and the general sanitation of the city.

This landfill site (Bhakiya) extends over tens of kilometres and attracts about 150 waste pickers, mostly women without any safety protections, and mostly barefoot. The issue is further exacerbated during the Magal pilgrimage, which attracts over four million pilgrims.

The project has received a grant from the SCF TA for a legal study.

Legal Study

The study was conducted to understand the legal framework to invest in the country, including:

- Country legal risk analysis.
- Contracting process with State of Senegal and Khalifa.
- Contracting process with SONAGED and SENELEC.
- Competitive bidding vs direct award of the contract.
- Legal analysis for an “Offre d'Initiative Privee”.

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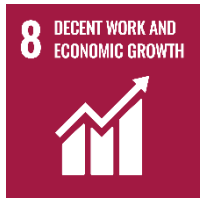


SDG 8: Decent Work and Economic Growth

Direct and indirect jobs could be created by the project during the construction, operation and maintenance of the plant. Additional skill development are expected to be provided to train people. The project will also increase collaboration with the National Waste collection company, SONAGED.

SDG 5: Gender Equity

It is expected that the project will promote gender equality:

- At least 50% of women will be employed in waste sorting and recycling.
- The project will implement a Gender Action Plan with targets and monitoring procedures to ensure impact, in accordance with the SCF Gender Policy.

SDG 13: Climate Action

The project expects to:

- Avoid CO2 emissions compared with a conventional fossil fuel thermal plant.
- Avoid landfill waste, and associated methane emissions, and pollution.
- Use of Fly and Bottom Ash by local cement manufacturers as a substitute for the coal cement manufacturers currently use.

Waste Management

South Africa: Mustapha Energy

South Africa: Waste Management

Overview:

The SCF has provided technical assistance for Mustapha Energy, a waste management company that provides centralized sorting, Refuse Derived Fuel (RDF) production, and waste-to-energy infrastructure.

Mustapha's sorting process includes sorting out recyclables, organics and non-recyclables to be used in RDF production. Their RDF production is made from pre-sorted non-recyclable, high-calorific-value waste materials.

The process' flexible design allows for separate low-calorific and high-calorific waste treatment and disposal methods, which complements with other recycling activities such as supplying energy to the adjacent biogas plant. It also blends industrial and municipal solid waste (MSW) disposal to ensure high-value products with consistent quality.

The challenge:

South Africa's electricity mix relies heavily on fossil fuels (as of 2022, South Africa was the world's 7th largest producer and consumer of coal and one of the world's biggest carbon dioxide emitter).

The country's energy crisis has resulted in the search for alternative energy sources. Current power generation capacity is not enough to satisfy demand (causing regular load shedding) which inflicts a heavy toll on the country's economy.

Furthermore, landfills remain the primary disposal option for municipalities, communities, and industries. As land pressure increases and shortages for development around large cities grow, along with the heightened risk of groundwater contamination and methane gas emissions, coastal cities such as Port Elizabeth and Cape Town are increasingly turning to Waste-to-Energy solutions.

South Africa: Waste Management

The project has received Technical Assistance in the form of an Environmental and Social Impact Assessment (ESIA), Pre-feasibility, and Feasibility Studies.

The SCF TA supported Mustapha Energy by providing pre-feasibility and feasibility studies with the objectives to:

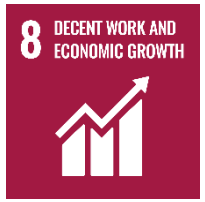
- Compare the quality of RDF in comparison to standards set forth in SCF's RDF white paper,
- Assess the characteristics of relevant waste streams,
- Evaluate the traffic flow of waste deliveries, residuals removal, RDF removal and the waste flow from Cape Town Biogas (CTB) to Mustapha Energy,
- Investigate dig sites for suitable development locations.

The SCF TA is also supporting the completion of an Environmental and Social Impact Assessment (ESIA) for the project.

OUR IMPACT

SDG 5: Gender Equality

Mustapha Energy has compiled a Gender Equality and Social Inclusion (GESI) plan with the assistance of Green Cape and the Climate Finance Accelerator to enhance the gender equality component. There is 10% female ownership currently.



SDG 8: Decent Work and Economic Growth

The project is expected to directly create around 30 jobs for informal waste pickers in the local community. Indirectly, the project is expected to create 200 jobs.

SDG 13 Climate Action

The project's circular approach to waste management intends to avoid emissions from various sources:

- Methane emissions by diverting organic waste from landfill.
- Carbon emissions from the substitution of coal-burning energy generation practices (RDF in cement plant), fuel oil. substitution (heat & power offtakers), and avoidance of long-distance transportation of waste and coal.

Waste management

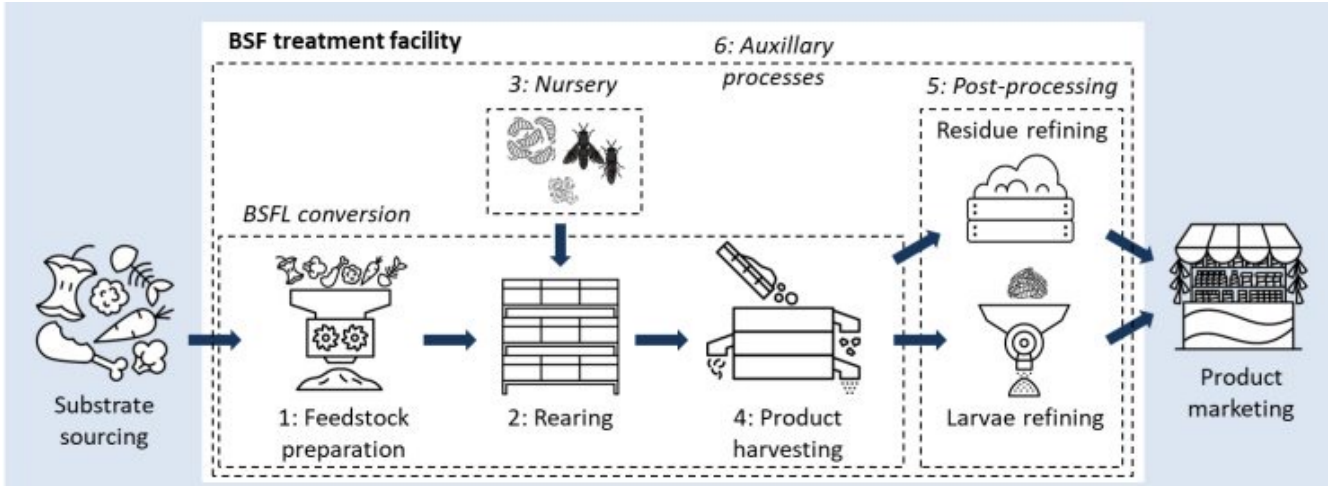
Global: BSF Study

Overview:

The SCF TA has commissioned a global study of the Black Soldier Flies market and technology.

The black soldier fly (BSF), Hermetia illucens, is a tropical species used for the bioconversion of biowastes and byproducts into marketable, high-value products.

This global market study mapped 121 BSF companies worldwide. Business models are based on smallholder farming, the production of high-quality ingredients for the pet and livestock markets (e.g., poultry, pig, aquaculture), waste management, genetics and sale of young larvae offspring, and the production of higher value products.



The challenge:

Today, global food waste is a greater challenge than ever before, with the United Nations Environment Programme (UNEP) indicating that one-third of all food produced globally is lost or wasted, amounting to 1 billion tonnes of food waste per year.

As the demand for organic waste disposal grows, new technologies are emerging to promote sustainable waste management.

One such technology is BSF, which supports circular waste management by efficiently eliminating waste and producing sustainable products that reduce production-related emissions. This provides a dual-benefit solution.

Currently, however, BSF facilities primarily focus on producing homogenous, high-value agri-food products, as they offer the highest efficiency and reliability in larvae production.However, they often:

- Come at a cost
- Struggle to find a stable supply of high-quality wast
- Have competing uses.

Market Study

The SCF TA has completed a study with an overview of the BSF technology, existing players, and dynamics in the global sector, as well as technical matters related to the operation of a BSF facility, and regulatory frameworks around the globe. It highlights the following:

Currently, the majority of municipal solid waste in developing countries is organic (over 50%). Existing agro-industrial practices in these developing countries contribute to waste accumulation in landfills or dumpsites, creating a significant source of methane emissions.

One of the largest agricultural industries in developing nations, animal feed, has a highly unsustainable supply chain. For example, fish feed and pet food are largely based on unsustainable animal protein sources. It takes on average 2 kg of wild fish to make 1 kg of aquaculture fish.

With little organic fertilizer available, many developing countries also rely on imported fertilizer, which can negatively impact soils long term. These challenges, paired with a need for low to medium-skilled labour across developing regions like East Africa create an opportunity to innovate new sustainable waste management practices that provide employment and well-being benefits to communities.

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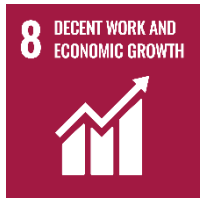


SDG 8: Decent Work and Economic Growth

BSF sites can provide employment and improve the livelihood of the local population by creating job opportunities and providing a formal living wage.

SDG 11: Sustainable Cities and Communities

BSF projects are expected to offer community benefits from reduced waste and associated emissions and pollution reductions, thereby improving the livelihoods of local communities.

In countries where growth stunting is still common, the use of BSF larvae for animal feed, especially chicken that result in eggs, could help to address nutritional and food security issues.

SDG 13: Climate Action

BSF intends to provide a solution to treat waste with a lower environmental impact than other treatment alternatives such as (unmanaged) landfilling, composting, incineration/open burning, etc.

Use of waste in a BSF-based bioconversion system could reduce greenhouse gas emissions by approximately 50x compared with natural decomposition (EAWAG 2019).

Waste management

Global: Waste to Energy - Pyrolysis

Global: Waste to Energy - Pyrolysis

Overview:

SCF TA has received numerous proposals for projects involving the recovery of waste using the pyrolysis process and therefore commissioned a study to evaluate this technology and its benefits, based on an analysis of existing industrial solutions.

Pyrolysis is a method of energy recovery from waste through thermochemical conversion, a process that has been known and implemented for centuries. **Today, pyrolysis has a wide range of applications,** from producing biochar from biomass to large-scale plastic pyrolysis projects backed by major oil companies. The recovery of specific fractions and their conversion into fuels can lead to profitable ventures with significant environmental and social benefits.

The challenge:

The climate benefits of developing pyrolysis techniques stem from their ability to produce gaseous and liquid fuels that can replace fossil fuels.

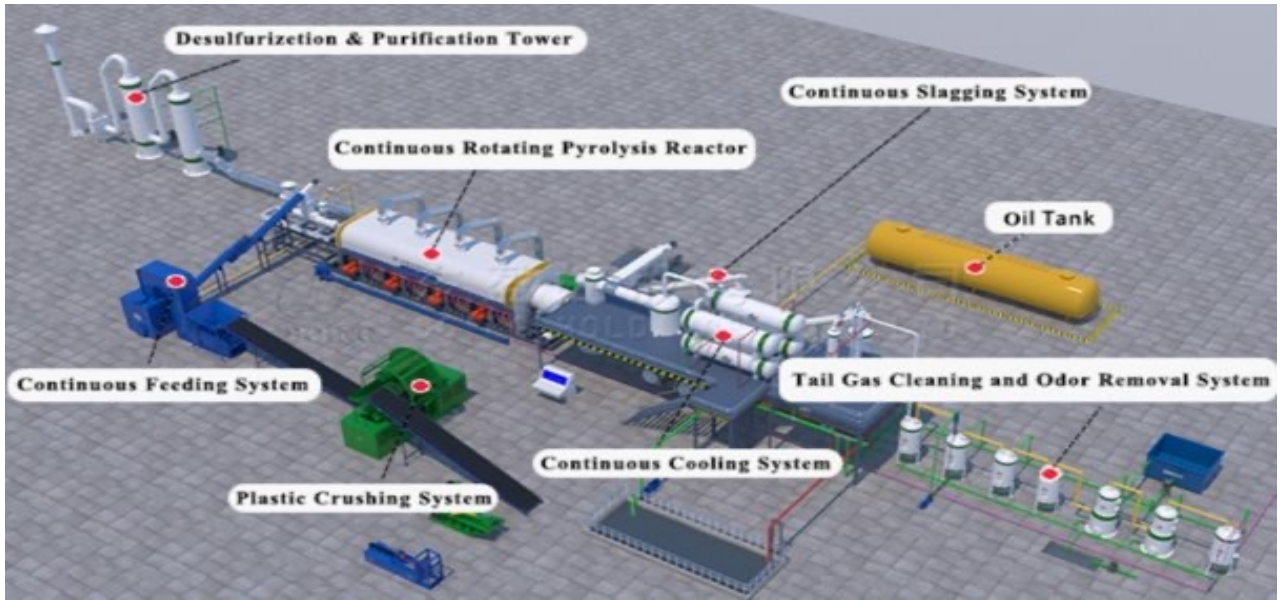
When dealing with waste of fossil origin, such as plastics, recovering the material is preferable. However, when material recovery is no longer technically or economically feasible, recovering energy through methods like RDF (Refuse Derived Fuel) or converting waste into liquid or gaseous fuels helps optimize resource use, aligning with the waste hierarchy and circular economy principles.

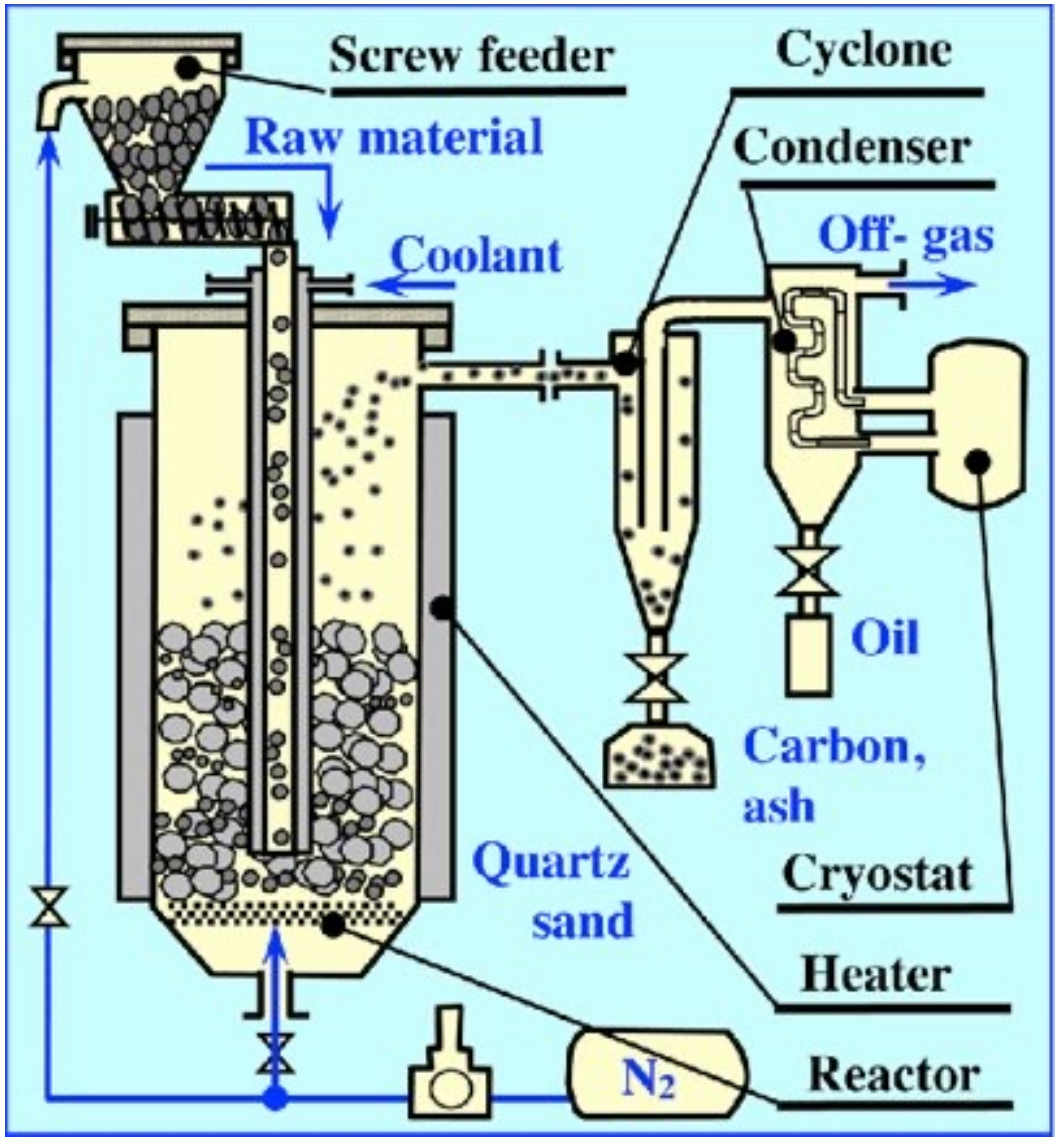
Using these gaseous or liquid fuels in place of fossil fuels reduces greenhouse gas emissions. Additionally, it lowers methane emissions by decreasing the amount of waste sent to landfills.

Market Study

Through its Technical Assistance Facility, the SCF has commissioned a study to benefit from a global vision of the pyrolysis technology market. The study includes the following:

- A review of **the pyrolysis market**
- A review of **pyrolysis technology providers**
- A review of **the information on potential projects and an assessment of their veracity**





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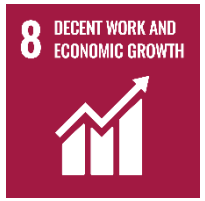


SDG 8: Decent Work and Economic Growth

Pyrolysis projects are expected to provide employment and improve the livelihoods of local populations by creating job opportunities and providing a predictable living wage for local people.

SDG 7: Affordable and Clean Energy

The pyrolysis process is expected to create high-quality liquid and gas fuels with energy content comparable to petrol fuel from a variety of waste sources. This fuel not only avoids the emissions associated with the combustion of fossil fuels but also replaces the need to extract associated hydrocarbons.

SDG 13: Climate Action

The project intends to reduce CO2 emissions by producing liquid and gaseous fuels as alternatives to fossil fuels for energy production. This approach could also decrease methane emissions from landfilled sewage sludge and organic waste, minimize greenhouse gas emissions from artisanal charcoal production, and help prevent forest fires.

URBAN DEVELOPMENT SOLUTIONS

Ecuador: Six Senses Cerro Verde Galapagos

Overview:

Six Senses Cerro Verde aims to demonstrate how ecotourism can contribute to the protection and restoration in the Galapagos. The project seeks to offer an alternative to carbon intensive tourism development and unsustainable consumption patterns, increase ecosystem resilience in high-value biodiverse areas, and engage local communities and island inhabitants on climate mitigation and adaptation, all while offering a best-in-class traveller experience.

By placing the reduction of invasive species and protection of endangered species at the core of value creation, the holistic ecotourism model serves as a new region-wide approach.

The challenge:

Whilst tourism is critical to the region's development, the Galapagos Islands have a unique biological diversity that needs to be protected. Wildlife and natural features such as beaches, coral reefs, and forests are the basis of the tourism industry and visitor experience. However, traditional tourism is increasingly detrimental to biodiversity.

The Galapagos Islands are especially susceptible to the introduction of non-native and sometimes aggressive invasive species given their dependency on imports. Moreover, the Galapagos archipelago is one of the regions most vulnerable to climate change (Di Carlo et al, 2010). Consequently, an ambitious paradigm shift towards low-impact and climate-resilient tourism development is urgently needed to ensure the region can prosper without comprising its natural heritage.

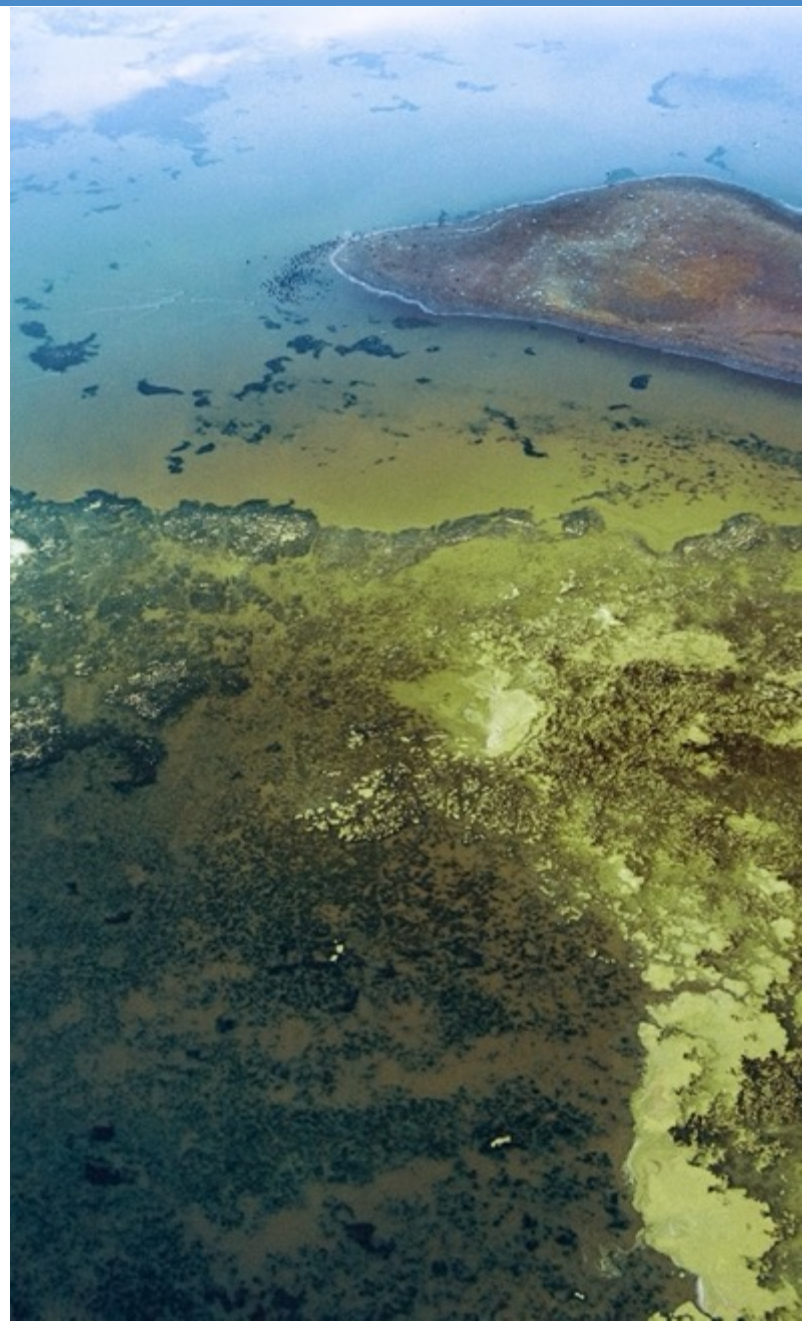
The project has received Technical Assistance in the form of an Environmental and Social Impact Assessment (ESIA) and Feasibility Studies involving ecosystem restoration.

Investment

Pegasus SCF serves as a capital partner to the developer, Orgal S.A. in the creation of a luxury ecotourism resort on San Cristobal Island in the Galapagos. Development is underway, with anticipated construction timeframe of two years.

TA focuses on

- Stakeholder consultation according to Gold Standard's rules
- Updating the ESIA including the Management Plan of the Environmental Impact Assessment/Biodiversity Action Plan and Monitoring and Evaluation Plan
- Natural Ecosystem Restoration Design Strategy
- Plant Nursery Design Strategy



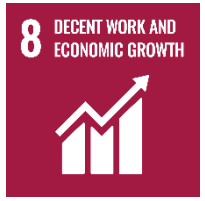
OUR IMPACT

SDG 4: Quality Education

Educational activities and capacity-building are an integral aspect of every activity in the project – from constructing to operating – and targets all key stakeholders, such as local communities and visitors. The goal is to inform them about the socio-economic importance of nature conservation, promoting participatory management models and nature tourism.

SDG 5: Gender Equality

A significant amount of employment opportunities should be created for women at the hotel, once operational. In addition, the project will be funding equipment and supplies to establish daycare services, laundry services, and catering services opportunities. These services will be run by a local women's organization: Funjeca.



SDG 8: Decent Work and Economic Growth

During both the construction and operation phases the ecolodge aims to create direct and indirect employment opportunities for the local population.

OUR IMPACT

SDG 12: Responsible Consumption and Production

The project aims to work with local farmers to train them on sustainable agricultural practices, improved planification, and post-harvest processing activities. Our goal is also to connect farmers to markets to improve livelihoods and reduce food imports from the mainland, reducing the risk of introducing invasive species to the island.

SDG 13: Climate Action

Our goal is to reduce our emissions by up to 50% compared to a normal hotel. The main planning philosophy of the ecolodge is to create a sustainable destination that includes low-impact accommodations and related hospitality facilities based on a thorough energy, waste, and water management system that ensures environmentally friendly and efficient use of resources. The ecolodge will be LEED-certified.

SDG 15: Life on Land

Eradication of invasive species and introduction of native species on the project site: Controlling invasive species by replacing invasive species with native species in conjunction with the National Park Service and working with local farmers in the vicinity of the ecolodge to reduce imports of invasive species from the mainland.

Kenya/Mexico: Curvalux

Mexico: Internet energy efficiency

Overview:

Curvalux is a manufacturer of solar-powered fixed wireless access (FWA) broadband technologies. The company aims to provide its customers with broadband connections that offer lower energy consumption, reduced costs, and higher speeds.

Their technology is well-suited for retrofitting existing mobile towers as well as for expanding mobile networks in both rural and urban settings.

SCF is investing in Curvalux to provide nearly 50,000 users with access to broadband connections in SCF countries, offering lower energy consumption, reduced costs, and higher speeds.

The challenge :

Internet has become crucial for access to information, education, productivity and economic growth. However, over 2.9 billion people remain without internet access as network operators fail to reach rural areas without electricity. Africa, in particular, is one of the last regions on the planet where the lack of internet services severely impacts the lives of billions of people.

In developing countries, consumers primarily connect to the internet via mobile networks. Mobile networks account between 2 to 3% of global power consumption or 1 Gigaton out of 36.8 Gigatons of CO2 released in 2022.

If the 2.9 billion people without internet access were connected to the internet through mobile technologies, an additional Gigaton of CO2 may be released into the atmosphere each year.

Mexico: Internet energy efficiency

The project has received Technical Assistance in the form of a Feasibility Study including sites selection and regulatory consideration.

Investment

Pegasus SCF serves as a capital partner to Curvalux, Inc. The investment is geared toward establishing contract manufacturing operations in Mexico and supporting working capital needs of the Company, necessary for fulfilling open purchase orders. SCF is also considering working with Curvalux to design and operate localized mobile networks. TA is focused on assessing the feasibility of this initiative in select municipalities in Africa.

TA focuses on:

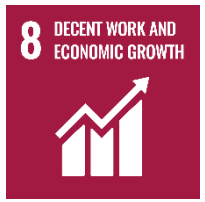
- Feasibility of operating localized networks in select municipalities in Africa
- Regulatory considerations in the country of operation

For Customer Premise Equipment (CPE) sites (target Community):

- Details/locations of the remote customer site where the CPE/CPE+s will be installed
- List of CPEs installation locations and for each location

For Tower sites:
Identify potential sites for tower installation.

OUR IMPACT



SDG 8: Decent Work and Economic Growth

SCF investment intends to enable Curvalux to employ a contract manufacturer creating permanent jobs in the assembly and testing of Curvalux products in Mexico.
The project is also expected to facilitate economic opportunities within the areas receiving internet access.

SDG 11: Sustainable Communities

The project intends to provide a more stable internet access.

SDG 13: Climate Action

Curvalux aims to sell products that will expand mobile networks and improve connectivity, bring associated benefits with safety, training, economic opportunities, etc.

SDG 5: Gender Equality

The project will comply with the SCF Gender Action Plan and provide formal work opportunities for local women in Mexico.
The project is also expected to promote safety for women in areas that do not currently have internet availability.

Urban development

Rwanda: E-motorbike

SCF TA is providing grants for a feasibility and an environment and social assessment to e-motorbike company in Kigali, Rwanda.

Overview:

Electrical motorbikes would help to reduce CO2 emissions and reduce the demand for fossil fuels. The e-motos project in Kigali is financed by an e-motorbike company, cooperating with several manufacturing partners.

The deployed e-motos will be leased to the e-moto taxi drivers using a Pay-as-you-drive system accessible through mobile money, removing the barriers preventing taxi drivers from accessing efficient electric vehicles.

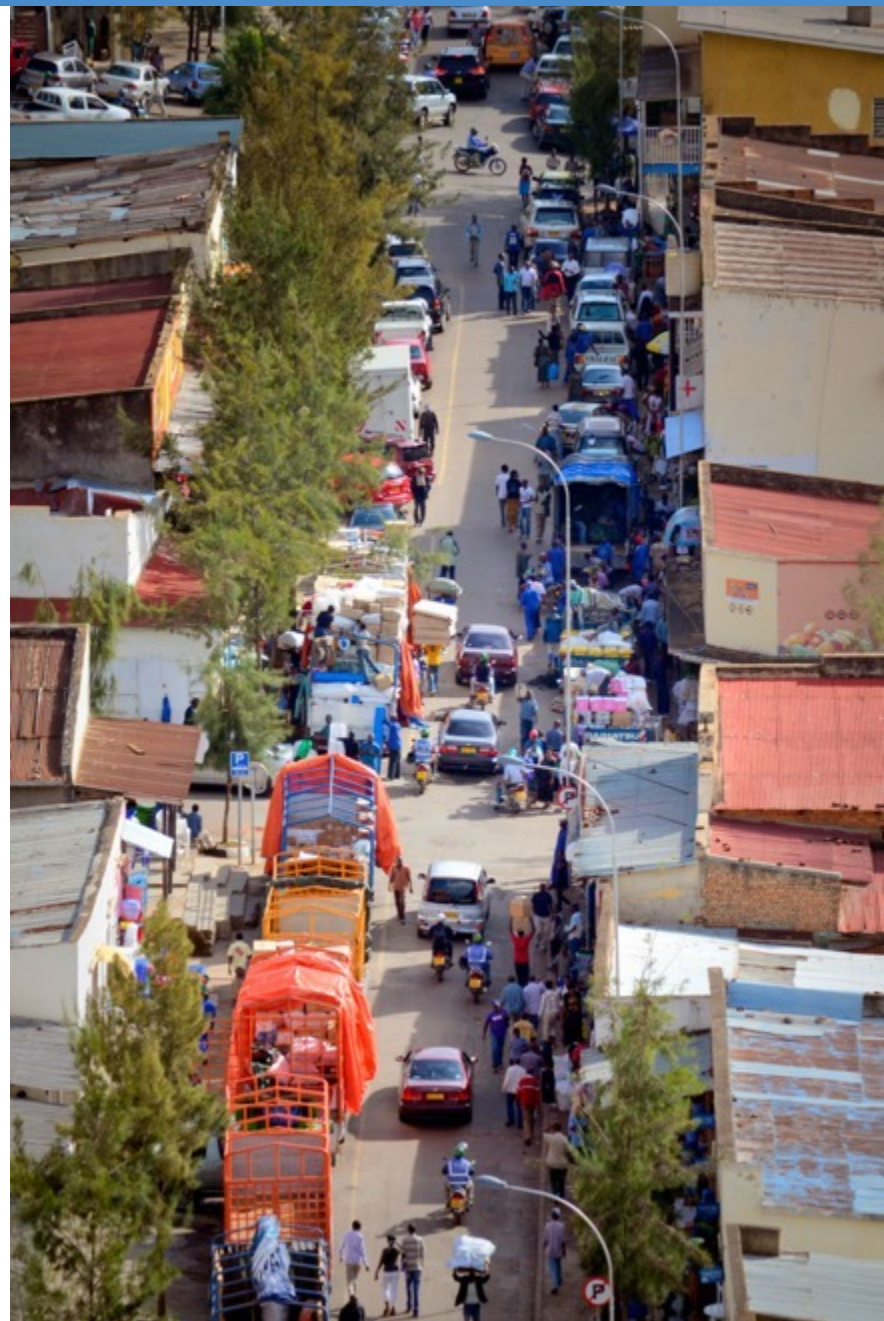
By 2030, the project expects to have over 35,000 electric motorbikes deployed in Rwanda reducing approximately 51,637 Tons of C02 emissions.

The challenge :

Motorbikes play a substantial role in East African transportation, with an estimated 5 million in operation due to their affordability in terms of purchase and fuel consumption. In Sub-Saharan Africa, 90% of motorbike purchases are for commercial purposes, often utilized for taxi or delivery services.

In Rwanda, transportation primarily relies on internal combustion engine (ICE) vehicles, which have negative environmental impacts, including air pollution harmful to health, greenhouse gas emissions that accelerate climate change, and noise pollution, among other issues.

The Rwanda National Greenhouse Gas Inventory shows that the taxi motorcycles are the second largest source of greenhouse gas emissions, accounting for 32.42% of annual road traffic emissions.



Technical Assistance

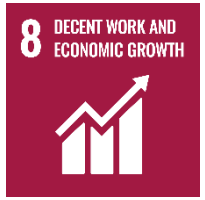
Feasibility study:

- Assess the Battery as a Service (BaaS) model and the market for new batteries.

Environmental and social study:

- Desktop environmental and social (ES) assessments for the project in accordance with IFC Performance Standards and other applicable guidance, including determination of risk categories.
- Site inspections of each location to identify additional ES risks.
- Stakeholder consultation in accordance with Gold Standard requirements.
- Data gap assessment of the company's Environmental Social Management System (ESMS) against SCF requirements.
- Preparation of a report detailing assessment findings.
- Development of an Environmental Social Action Plan (ESAP) for the project, detailing requirements to further assess or mitigate identified ES risks or data gaps.

OUR IMPACT



SDG 8: Decent Work and Economic Growth

The unemployment rate in Rwanda is high, at 17%. Employment is also mostly informal (90%) indicating potential income security issues. In 2030, the project is expected to create 21 direct jobs and benefit over 35,000 moto riders indirectly.

SDG 5: Gender Equality

Rwanda scored 0.79 in the economic participation and opportunity area of the gender gap index in 2022. This indicates that women were 21% less likely to have equal economic participation and opportunities than men.

The project will comply with the SCF Gender Policy to create employment opportunities for women. The project aims to benefit women by facilitating affordable transport and improving safety issues.

SDG 13: Climate Action

Facilitating the adoption of electric powered motorcycles will reduce the need for fossil fuel powered transport.

By 2030, the project is expected to have over 35,367 motorbikes deployed in Rwanda reducing approximately 51,637 Tons of CO2 emissions.

Urban development

Morocco and Senegal : IFRIA

Overview:

Ifria is an integrated cold chain logistics development platform that develops and operates temperature-controlled logistics (“TCL”) assets in North and West Africa where reliable cold chain logistic operations are lacking. These assets range from added-value cold storage logistic warehouses for perishable products to first-mile cold chain at the production and farm level.

The platform aims to address significant gaps in the TCL market by developing greenfield facilities as well as acquiring and expanding existing ones. It plans to establish a network of more than five temperature-controlled warehouses to support local, import, and export markets in each country, providing access to cold chain services that meet international standards. Locally, this will allow small producers and farmers to reduce waste, improve the quality of their products and enable access to international markets via access to preservation and storage services. Depending on the location, these hubs will act as a logistics platform for importers and exporters improving access and trade within the African continent.

The challenge:

The lack of, and underdevelopment in, temperature-controlled logistics in North and West Africa causes high post-harvest losses for farmers and small producers, resulting in lost income, increased food insecurity, lower quality produce, poor resource efficiency, etc. In Morocco and Senegal, food waste ranges from 10% for poultry and red meat to 40-50% for fruits and vegetables, including potatoes and onions. Dairy products and fish also exhibit high wastage between 15% and 25%. In addition, this lack of service results in an uncompetitive environment for the export of perishable goods as international standards are often not met.

Ifria aims to solve these issues by providing the opportunity to create a coherent network of efficient cold chain logistic hubs in Africa built to international standards. The platform will utilize a market systems approach to meet the needs of farmers who do not have access to cold chain solutions in order to help keep their products fresh, increase shelf life, and reduce post-harvest losses.

SCF serves as a capital partner to the company for the development and construction/acquisition (and expansion) of five temperature-controlled logistic warehouses in Senegal and Morocco.

Investment

SCF serves as a capital partner to the Company for the development and construction/acquisition (and expansion) of five temperature-controlled logistic warehouses in Senegal and Morocco.

Expansion Prospects

Further capital could be made available for additional facilities to be constructed / acquired (and expanded) in Cote d'Ivoire and Tunisia post successful implementation in Senegal and Morocco.

Technical Assistance

IFRIA has benefited from a package of studies funded by the SCF TA to further develop its bankability. The package includes;

- an impact assessment
- a feasibility study
- an ESIA
- a stakeholder consultation.

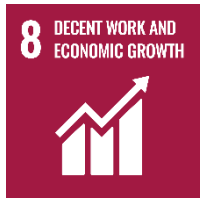
OUR IMPACT

SDG 3: Good Health and Wellbeing

The project could have a direct impact on better nutrition by improving product shelf life and ensuring that products maintain their freshness and quality for a longer duration through proper handling and storage. It should also allow improved healthcare by offering appropriate storage methods for pharmaceutical products.

SDG 7: Affordable and Clean Energy

Energy-efficient solutions such as insulation, renewable energy, and optimized operations and processes could be installed and implemented in all facilities.



SDG 8: Decent Work and Economic Growth

The platform is expected to create direct jobs for development, construction, operations, and maintenance as well as indirect jobs (i.e., value add services, transport, handling, distribution etc.).

SDG 12: Responsible Consumption and Production

By increasing market access (for farmers) and increasing the shelf life of perishable products (for stores/supermarkets), the project intends to create a virtuous circle: boosting both farmer and store incomes through efficient use of inputs and limiting waste. This could improve resource efficiency from production to consumption , thereby reducing pressure on the ecosystem.

SDG 13: Climate Action

The platform is expected to mitigate GHGs emissions via (1) reduction in methane emissions from landfills by reducing post-harvest losses and food wastage by providing cold chain logistics and storage solutions currently not widely available; and (2) reducing emissions from transportation where the current solution for several perishable products is to be shipped and stored in Europe, and then shipped back.

Impact Measuring

Gold Standard plays a critical role in ensuring all SCF projects meet rigorous Environmental, Social, and Governance (ESG) criteria. As the official body responsible for impact certification within the SCF, **Gold Standard develops and implements standardized metrics, tools, and methodologies**. These initiatives help projects align with the SDGs and achieve maximum impact.

Key Achievements:

- New Methodologies:
  - Portfolio requirements – process and performance impact certification for equity and use of proceeds debt
  - Adaptation Requirements for adaptive management practice
  - Integrated farming methodology initiated
  - Avoided food waste methodology for claims (soon to be published)

- Project Screening Guidance: Offers clear guidelines to enhance project screening processes, ensuring compliance with Gold Standard's safeguarding principles and ESG criteria.

- New tools
  - Land use & forest activity requirements digital tool
  - Introduction of SDG 11 to the GS SDG tool
  - Development of NDC tool to assess NDCs
  - Indicators for aquaculture and wastewater were added to impact assessment tool
  - Methodology Selection Tool that streamlines the process of choosing appropriate methodologies for project certification, making it easier to integrate climate adaptation and nature-based solutions
  - Enabler assessment tool started.

These tools and methodologies are designed to facilitate efficient project integration of climate adaptation and nature-based solutions, contributing effectively to SDG targets.

In July 2023, SCF achieved an important milestone by becoming the first fund ever to achieve Pilot Design Certification under the world leading Gold Standard – making a significant milestone in impact design and measurement.

Achieving GS design certification means that it has been independently verified that:

- Integration of SDGs in Decision-Making: SCF's governing body incorporates the United Nations' SDGs into its decision-making framework, particularly focusing on SDG 5 (Gender Equality) and SDG 13 (Climate Action for mitigation and adaptation) and is supported by GS in achieving these impacts through process and performance requirements.
- Rigorous Impact Assessment: SCF's investments are evaluated for potential negative impacts using GS4GG safeguarding principles, ensuring compliance with the "do no harm" principle and avoiding lock in.
- Sustainable Investment Exit Strategy: All investments are required to have a defined exit strategy to ensure long-term adherence to ESG standards and minimize negative impacts throughout the investment lifecycle.
- Impacts are real – due to fund design ex ante and portfolio impact performance measurements ex post
- Stakeholder consultation has been implemented in accordance with best practice

These achievements not only underscore SCF's commitment to sustainability but also set a benchmark for future climate funds in the global arena.

Looking Ahead

Picture: Wubu, Guatemala

Over the past three and half years, the SCF has made substantial progress in supporting projects that advance climate action and sustainable development, demonstrating the effectiveness of its innovative approach to blended finance. By targeting mid-sized projects across renewable energy, sustainable agriculture, waste management, and urban development, SCF has contributed significantly to local climate resilience, economic growth, and social inclusion in emerging markets and developing countries.

SCF is dedicated to achieving ambitious targets, including producing **1.8 billion kilowatt-hours of renewable energy per year, creating 20,000 direct jobs, and improving the living conditions of 17 million citizens**. Moreover, the Fund aims to **reduce 80 million tons of CO2 equivalent emissions** while ensuring that 100% of its projects are aligned with at least one of the 2X Challenge criteria, promoting women's economic empowerment and gender equality.

Looking ahead, SCF remains committed to bridging the financing gap for climate-resilient infrastructure at the subnational level by mobilizing additional investments and enhancing local capacities. By maintaining rigorous impact measurement and adhering to the highest environmental, social, and governance standards, SCF sets a benchmark for future climate initiatives globally. The continued collaboration with partners and stakeholders will be crucial in driving further progress towards these goals and ensuring a more sustainable and equitable future for all.

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