

# GROVE: FORESTRY SMART LEDGER

**TYPE:** NATURE-BASED SOLUTIONS, SUSTAINABLE AGRICULTURE, AND LAND USE

**GEOGRAPHY:** ASIA, INDIA, LATIN AMERICA

**LAB CYCLE:** 2020

**PROPONENT:** GLOBAL MANGROVE TRUST

India has pledged to create a carbon sink of 2.5-3 billion tons through 2030, for which it would require USD 15 billion annually. Mangroves can typically store four times more carbon than rainforests and are inexpensive – making them arguably the most efficient carbon sequestration technology in the world.

However, small-scale forestry community projects do not have reliable corporate and donor financing. In addition, only large forestry projects have the capacity to absorb high carbon verification costs and thus small-scale projects are automatically excluded from carbon finance markets. Thus, it is imperative to lower barriers to entry for carbon finance markets and reduce third-party verification costs in order to scale up community forest planting.

GROVE: FSL crowdfunds capital for small-scale forestry projects, reduces monitoring costs through remote sensing and machine learning, and increases financial transparency and local community earnings through blockchain-backed smart contracts.

## INNOVATION

GROVE: FSL is a novel approach to address barriers in small-scale mangrove forestry projects. First, a peer-to-peer platform connects local communities' mangrove projects with corporate and individual funders eager to achieve carbon neutrality.

Second, a blockchain ledger ensures complete transparency and efficient tracking of financial flows and facilitates impact reporting for project benefactors.

Last, a combination of satellite remote sensing and machine learning expeditiously measures impact and significantly reduces costs related to third-party validation and verification.

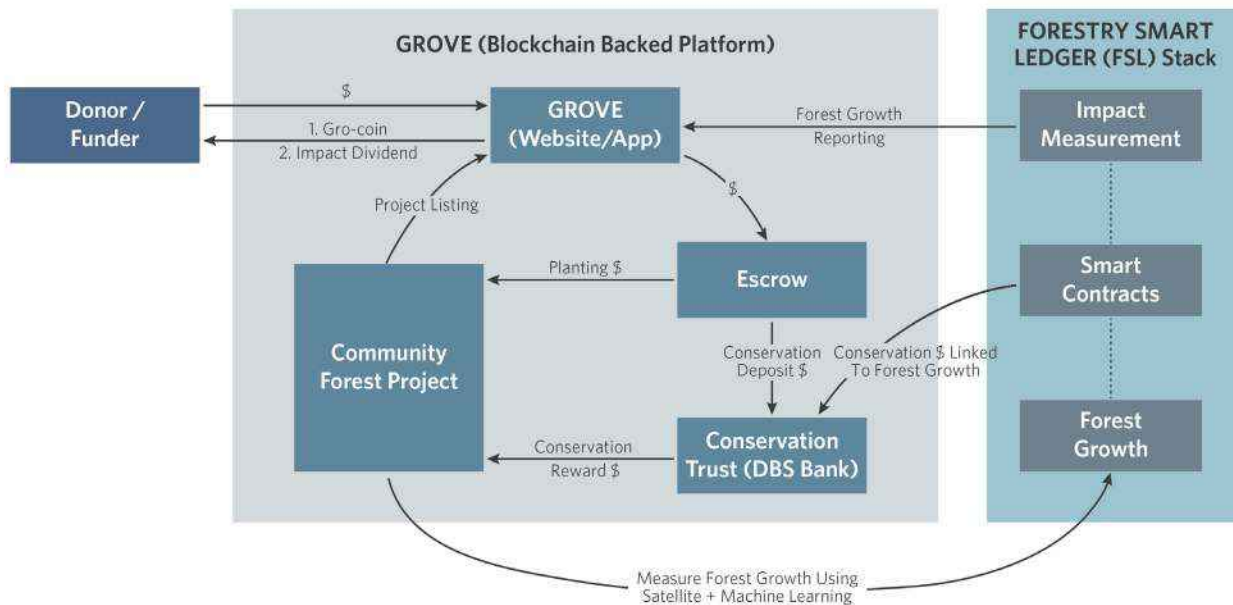
GROVE: FSL is the only solution that simultaneously focuses on growing forests, benefiting local communities, and improving the efficiency and transparency of financial flows.

## IMPACT

GROVE: FSL plans to mobilize crowdfunding campaigns of up to USD 5 million, funding projects equivalent to 2,500 hectares in the first year. This figure could rise to USD 38 million within three years, sequestering up to 8.2 mn tCO<sub>2</sub>e – the same as taking 180,000 cars from roads for 10 years.

In addition to carbon sequestration, mangroves act as natural shields and protect human life in coastal communities and property worth billions from extreme weather events.

Lastly, the incomes of local communities can more than double thanks to more abundant fish and other natural resources. With global philanthropy dedicating a portion of resources towards battling COVID-19, GROVE: FSL can provide new funding sources for mangrove forestry.



## DESIGN

Potential funders can go through projects listed on GROVE's website and choose which mangrove project to fund. Funders are issued a GRO-Coin (a non-fungible digital token) signalling their stake in the project. A portion of the garnered funds is released upfront for planting, while the rest will be kept in a conservation trust and released periodically to local community members as a conservation performance reward. FSL is the tech stack at the backend that combines remote sensing and machine learning to monitor and track biomass growth.

GROVE and FSL are inter-connected through a pre-programmed digital smart contract that ensures that local community members are financially rewarded for their conservation efforts. A more impactful assessment would result in higher reward payments.

Revenue source for GROVE comes from a 10% admin fee of the crowdfunded amount, and for FSL, from fees for verification and project service, such as reports on baseline figures, biomass estimation, benefit sharing contract set up etc.

## TEAM



**DR. RYAN MERRILL**  
GLOBAL MANGROVE TRUST



**DR. SIMON JD SCHILLEBEECKX**  
GLOBAL MANGROVE TRUST

## INVESTMENT OPPORTUNITIES

TYPE	ROLE OF CAPITAL	AMOUNT
<b>GRANT</b>	<b>FSL</b> Capacity building - FSL tech stack development as an open source public good service.	<b>USD 1MN</b>
<b>VOLUNTARY CARBON OFFSET/GRANT</b>	<b>Fund a mangrove project</b> - Expedites mangrove funding - and biomass data can feed into FSL. - One closure can instigate financial closures for subsequent campaigns.	<b>Avg. Cost/ha -USD 5,000</b> <b>Typical size: 25-200 Ha</b>
<b>VENTURE CAPITAL (SEED FUNDING)</b>	<b>The Green Company</b> - R&D, Ops, hiring staff, taking product suite to enterprise launch. - The growth of Green inadvertently leads to the growth of GROVE.	<b>USD 1MN</b>

The Global Innovation Lab for Climate Finance identifies, develops, and launches innovative finance instruments that can drive billions in private investment to action on climate change and sustainable development. The Lab is funded by the Australian Department of Foreign Affairs and Trade, Bloomberg Philanthropies, the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU), GIZ, the International Fund for Agricultural Development (IFAD), the Netherlands Ministry for Foreign Affairs, The Rockefeller Foundation, Shakti Sustainable Energy Foundation, and the UK Department for Business, Energy & Industrial Strategy. Climate Policy Initiative serves as Secretariat.