TRANSPARENCY AND TECHNOLOGY:

THE WAY FORWARD FOR ENVIRONMENTAL ASSETS

In today's increasingly scrutinized world, the need for transparency and validation of impact is the key to unlocking the flow of capital to great projects. As an owner and operator of nature-based assets, Forest Carbon, backed by AXA Investment Managers and PT Saratoga Investama Sedaya Tbk. (Saratoga), is building technology infrastructure for scale from the ground up.

Managing and restoring over 22,000 hectares of Indonesian peatlands through the Sumatra Merang Peatland Project, Forest Carbon is at the forefront of forest and biodiversity monitoring. Tested in harsh tropical environs, the company's technology has been validated and is now being deployed in new projects to:

a. Accelerate project workflow and drive down costs of manual mapping, satellite analysis and data collection, thereby shortening the time it takes for environmental assets to generate revenue

b. Produce audit-ready emissions calculations for each carbon credit, to be verified by international standards and carbon credit ratings companies using software developed in-house

To date, the Sumatra Merang project has successfully restored forest cover from 1% to 36% since its inception in 2016. In addition, the project invests back in the local community to provide health and education services. The project also creates jobs and programs that bring additional areas under protection through community-led forestry.

Covering approximately 3% of the earth's surface, peatlands are the largest natural terrestrial carbon store, but are in danger of becoming an emissions source instead of a carbon sink due to deforestation, exploitation and resulting wildfires. Identifying and harnessing the power of these habitats in real time can have an immense impact on carbon levels, and technology can have a major influence on accelerating project development.

Technology Infrastructure For Scale: Automating Carbon Credit Production

Carbon Credit production is critical to generate revenue from protecting threatened forests. One of the keys to transparency is improving how forest protection and restoration work is monitored, managed and verified.

Through the development of proprietary software, Forest Carbon is reducing the time and effort required at the initial assessment, as well as the credit calculation and documentation stages of carbon credit production. By automating the maps, tables and most importantly, emissions calculations for new projects, the company is reducing the time it takes to generate cash flow from each project. Perhaps the biggest differentiator of designing the software from the ground up is that the data and calculations produced are audit ready – meeting and even exceeding current industry standards.

Initial Assessment

Directly reducing the time and cost required for an initial feasibility study, Forest Carbon's proprietary assessment tool has increased the number of new project opportunities assessed, increased the quality of the assessments, decreased decision-making time and increased competitiveness by being able to immediately act on new opportunities.

Accurate Data For Credit Calculations

Following the feasibility study, gigabytes of complex data are analyzed in the cloud. Months of work from PhD-level technical experts has been reduced to minutes. But what about the data itself? Can that be verified and streamlined for transparency? In short, the answer is yes.

Using AI to model the peatland hydrology, Forest Carbon can track the flow of water around the site according to the elevation and distribution of waterways. The team uses this data to raise water levels to their original state. Understanding the path and level of water is crucial as it has a direct correlation to tropical forest health and regrowth. This analysis shaped the placement of 200 peat compaction dams in the logging canals that dried out the land, resulting in a six-centimeter rise in water levels since the project started.

This approach to wetland restoration has now been published and accepted in peer reviewed scientific journals. It creates the right conditions for assisted regeneration of the forest, which begins to return naturally. Then using satellite analysis, Forest Carbon develops high-resolution maps of the forest, which now show an unequivocal increase in forest cover from 1% to 36% in the past seven years.

This data serves as the basis for verification of carbon credits each year. It is stored and presented in a custom project dashboard, incorporating data from various Internet of Things (IoT) sensors to track and monitor weather, biodiversity and rainfall data. Camera traps and bio-acoustic sensors have been able to track the return of various endangered species at the site such as Sumatran tigers, gibbons and sun bears. The dashboard and sensors won an innovation award from Yale and are invaluable to the ongoing monitoring required for carbon credit verification.

Certification Documentation

The production of extensive scientific documents required for verification is a significant human resource cost to project developers. Forest Carbon's proprietary software permits real-time collaborative writing on the same document with review, tracking and stylistic capabilities to ensure all documents are formatted according to the requirements of each verification standard. Taken to scale, utilizing this software cuts down the time required for experts to perform necessary reporting and ensures the company's systems are prepared to use large language models and other forms of AI support.

The Way Forward: Ground Up Investment, Decentralization & Standardization

Always forward-looking, Forest Carbon applauds the recent efforts to improve carbon credit quality from players like the World Economic Forum and the Voluntary Carbon Markets Integrity Initiative (VCMI). Calls for more transparency will increase accessibility, equitability and quality of carbon credits. Innovative technology and increased social impact should play equal roles in the next generation of carbon markets. Decentralizing validation and credit issuance can bring buyers and sellers together more directly.

Together with our investors including AXA Investment Managers and Saratoga, Forest Carbon is confident technology-based solutions hold the key to addressing current bottlenecks in capital for nature-based projects, while driving down the high cost and barrier-to-entry for smaller land stewards.

Adam Gibbon, AXA Investment Managers Natural Capital Lead, in support these approaches said, "we are excited to see technology solutions road tested by Forest Carbon in the field, and believe their systems have the possibility to increase their speed of growth and deliver more transparency to the market".

Devin Wirawan, Investment Director at Saratoga, also stated, "We stand alongside Forest Carbon in their groundbreaking efforts to fuse technology with environmental conservation. Together, we believe in a future where innovation leads us towards more sustainable growth."