



CIFAR
ALLIANCE



fsdafrica

Fintech for Climate Resilience

A compendium of startup
innovations building resilience
in emerging markets



Acknowledgments

The Climate Innovation for Adaptation and Resilience (CIFAR) Alliance, formerly known as the Digital Finance for Climate Resilience (DF4CR) Task Force, was initially convened in 2021 to determine the opportunity for the digital finance industry to enable access to climate resilience solutions, and to chart a path to scale up an innovation ecosystem for this emerging sector.

The mission of the Alliance is to accelerate responsible innovation in digital finance for climate adaptation and resilience.

This paper is an output of the CIFAR Alliance Investors Working Group, a group of early to growth stage investors focused on investing and supporting entrepreneurs who are building solutions that improve the resilience of climate-vulnerable communities. The case studies were prepared by investors who are members of the Working Group and compiled by BFA Global/ Catalyst Fund.

The primary authors, Malika Anand (Catalyst Fund/BFA Global) and co-chair Maelis Carraro (Catalyst Fund/BFA Global) would like to thank the members of the working group for contributing the case studies and for their thought leadership, in particular co-chair Scott Onder (Mercy Corps Ventures), Agustin Vitórica (Gawa Capital), Tatwin Edmunds (BlI), Mark Kahn (Omnivore), and Punnet Chopra (Microsave). Special thanks also to FSD Africa for supporting the creation of this compendium.

Table of Contents

Introduction	3
Case studies	6
Abalobi	7
Aquarech	10
Bekia	13
Farmz2u	16
Floodbase	19
Gramcover	22
Meridia	25
Open Forest Protocol	28
Pula	31
Topl	34
WayCool	37

Introduction

Climate change impacts are likely to send more than 130 million into extreme poverty by 2030. Africa, Latin America, and South Asia are among the most vulnerable regions, where natural disasters, food insecurity, and health hazards are already exacerbating the vulnerability of local communities. There is an urgent need to build climate resilience among households and communities vulnerable to the impacts of climate change.

Startup innovators are at the forefront of creating the tools and services people need to manage disasters, adapt their assets and livelihoods, and build long-term resilience. They are collecting data on disaster risk, launching insurance products, crafting regenerative agricultural models, and designing ways to access carbon credit markets.

As promising and impactful as these innovations are, they struggle with many of the challenges that face early-stage ventures: funding, talent, customer acquisition, partnerships, and more. At the heart of these challenges is a common theme: the difficulty of creating monetizable, commercial models that are scalable with venture funds.

Fortunately, the last decade has shown us that fintech can enable greater accessibility and affordability of products for underserved, last-mile populations, leveraging digital payments, satellite data, online marketplaces, and embedded finance infrastructure to bring down costs, deliver access for low-income populations, and drive scalability of business models. Such achievements explain why investments in fintech companies increased from nine billion in 2010 to over 220 billion in 2021.



Fintech and climate resilience

This paper features 11 case studies of ventures that are building solutions that improve the resilience of climate-vulnerable communities, enabled by fintech. These case studies are drawn from portfolios of the CIFAR Alliance Venture Working Group whose members include Catalyst Fund, Mercy Corps Ventures, British International Investments (BII), FSD Africa, Gawa Capital, MSC, Omnivore, and IUCN. They illustrate how fintech can deliver scalable climate resilience solutions to those who need them most.

The case studies can be understood as part of a matrix of climate change impacts and fintech innovations. On the y-axis: the direct physical impacts of climate change. These impacts are both acute and chronic: more frequent, more profound weather-related disasters, and also long-run changes in weather, which threaten the livelihoods of those dependent on natural resources.

The case studies featured here are therefore divided into these two threats to climate resilience: extreme weather-related disasters and long-run climate changes threatening livelihoods, such as increases in temperature, precipitation, sea level rise, and other weather patterns.

On the x-axis: areas of fintech innovation. These case studies highlight three areas of fintech innovation: data and digital infrastructure, online marketplaces, and insurtech. Each of these areas of innovation makes use of a variety of tech and fintech enablers, including digital payments, remote sensors, satellite data, data infrastructure/APIs, and more, which are then organized into innovative business model approaches. For our purpose, we could only present a few case studies across three verticals of innovation, but many more exist in the market.

	Data and Digital infrastructure	Online marketplaces	Insurtech
Weather-related disasters	FLOODBASE		
Long-run climate changes threatening livelihoods	 MERIDIA  	   	 

Disasters like droughts, floods, infectious disease, wildfires, and hurricanes are a well-documented impact of climate change. Those exposed to disasters need a range of solutions from information and advisory about risk, insurance policies, and meaningful ways to rebuild in the aftermath. Fintech innovation around data and infrastructure, remote sensors, digital payments, and online marketplaces are all critical enablers for getting such solutions to market and reaching underserved and last-mile populations.

Long-run changes in weather are putting many livelihoods at risk, particularly those dependent on natural resources. Farming, fishing, forestry, pastoralism, and many of the livelihoods of low-income people are less productive and face declining prospects, due to declining natural resources. People with vulnerable livelihoods need

to invest in new climate-smart methodologies, access more resilient supply chains, or adapt to new, green jobs. Fintech innovations can facilitate investment in better inputs, lower costs of access, create traceability, and facilitate access to new customers.

Together, these case studies illustrate the range of valuable solutions that innovators are bringing to market to address urgent climate resilience needs across emerging markets. The objective of the CIFAR Alliance Working Group is to deepen the conversation about impactful, scalable climate resilience investment opportunities and to catalyse more investment toward this sector. We hope these case studies create inspiration and proof points on climate resilience solutions with the potential for impact and commercial scale, enabled by fintech.




Case Studies



 ABALABI

 AQUARECH

 Bekia
التعاون من أجلنا

 Farmz2U

FLOODBASE


 GRAMCOVER

MERIDIA

 FP

 PULA

 topl

 waycool



Sustainable fishery marketplace



About Abalobi

Investor: Catalyst Fund

Abalobi is a fishers' cooperative in South Africa that began as an environmental intervention to support and preserve small-scale fisheries. The team now boasts a platform co-designed with fishers to log their catch, manage fisheries, track processing, and interface with buyers.



"Using sustainable practices in fisheries is equally important for a climate-resilient future. Yet in the face of climate change, sustainability means making changes to how practices worked in the past — such as adjusting catch levels as conditions change, shifting management across space as species move, and more."

Environmental Defense Fund



The Model

Abalobi is a fishers cooperative in South Africa with the mission of supporting and preserving small-scale fisheries. The team deployed an extensive participatory design process with low-income fishers to build a “hook to cook” concept to connect fisheries to restaurants, which are willing to pay a higher price for a traceable, sustainable product. The venture offers a suite of apps:



Abalobi Fisher allows fishers to log their catch, and provides navigational support and emergency features.



Abalobi Monitor is used by fisheries authorities and NGOs to improve catch monitoring and it links fishers, monitors, and fisheries managers.



Abalobi Manager combines the fisher data into analytical dashboards to promote sustainable management of small-scale fisheries.



Abalobi Marketplace offers “fish with a story”, providing marketing and documenting the traceability of fish from the moment of catch until arrival at the market.



Abalobi Co-op expands activity tracking to include post-harvest contributions like cleaning, processing, and packaging, and also includes financial services like digital banking and invoicing features.



Abalobi Backend is a web-based portal that implementing partners outside of South Africa can use to replicate parts of the Abalobi system.

What is **unique** about the model

Fishers and the women in the value chain are one end of a long value chain from "hook to cook" that includes many middlemen who each take substantial margins, meaning fishers' take-home pay tends to be quite low. This has implications for their well-being and fishery health because it encourages overfishing. To benefit fishers and fisheries, Abalobi needed to solve a two-sided market – both helping the fishers to improve their product (sustainable and traceable) and then connecting them to higher-paying consumers, namely, restaurants - solving for both supply and demand simultaneously. Unlike many value chain players that focus on one fragment of the value chain, Abalobi has orchestrated a digital solution for the entire value chain, from start to finish.

This larger view has allowed Abalobi to reach and engage women along the value chain. Whereas many providers focus only on producers (an activity dominated by men), Abalobi includes cleaning, harvesting, and packaging. Globally, women are half of the small-scale fisheries workforce, heavily involved in processing and commerce aspects of the value chain. By including these activities in their definition of traceability and sustainability, Abalobi has explicitly included women's work in their intervention. Abalobi is going further by engaging women to help in the financial management of fishing activities, curate marketplace listings, and lead value-added services.



Unlocking the potential of smallholder fish farmers



About Aquarech

Investor: Catalyst Fund

Aquarech is a Kenyan mobile app that allows smallholder fish farmers to improve their livelihoods by sourcing quality feed, transitioning to tech-enabled precision fish farming, finding new routes to market, and accessing credit to fuel growth. The venture provides a range of solutions to farmers including field support, IoT sensors, a mobile app, and financing.



"Being an important part of the African agri-food system, fish has significant potential to contribute to the goal of reducing food and nutrition insecurity in Africa... In addition to food and nutrition security, fish is also an important contributor to other development goals in Africa. The fish sector contributes by promoting socio-economic growth, alleviating poverty, and improving the livelihoods of 12.3M people of which more than one-fourth are female and who are often considered to be among the poorest and most marginalized group on the continent."

[Global Food Security Report](#)



The Model

Aquarech has developed a unique model to unlock the potential of smallholder fish farmers in Kenya and—eventually—the entire African continent. It has become a premier platform for the segment by helping growing mid-scale fish farmers purchase high-quality inputs, as well as access fish traders for offtaking.

To start, the startup offers fish farmers the opportunity to source high-quality floating fish feed (in contrast to low-quality and/or sinking fish feed pellets) through its app, thus creating a unique aquafeed marketplace. The startup also offers fish farmers who sell through the platform easier access to fish feed via buy now, pay later (BNPL) financing. This financing allows farmers to source better feed and more of it, creating more productive production cycles.

In addition to inputs and financing, the mobile app, together with remote sensors, monitors the temperature and other vital variables on the farm. These inputs trigger notifications and alerts on the app, which also includes educational materials about improved fish farming practice and data-driven management practices.

Taken together, the Aquarech package is dramatically improving fish production. Growth cycles are shorter (by over 30%) thanks to better feed and monitoring, and harvest mortality is lower, thus improving farmers' overall productivity and resilience.

Aquarech does not stop at supporting just production, it also helps farmers get their product to market and sell it. The app connects farmers to off-takers, thus ensuring they have access to customers, and provides bulking centers and cold chain facilities to aggregate fish supply and set up deals directly with fish traders.



"Aquarech has really helped me just by giving me 45 bags of fish feed on credit, that's feed for more than a month. I use one bag per day"

[AquaRech Customer](#)



What is **unique** about the model

Aquaculture is an industry set to take off in Africa. Today, aquaculture makes up a small portion of total fish production (20%), which itself makes up a small portion of animal protein (only 19%, approximately half of the global and Asian per capita averages). There are only about 400,000 small and medium fish farmers in Africa. However, those numbers are growing. As climate change threatens wild fish stocks, the continent is increasingly dependent on aquaculture, which will be critical to the continent's food security going forward.

Not only does aquaculture present a growth opportunity, but it is also a development opportunity. Aquarech works side by side with smallholder farmers, as well as with feed manufacturers and fish buyers, to transform food production in the continent" and ensure nutritional security. [Research](#) has found that these fish farmers are among the most vulnerable populations: "The fish sector supports the livelihoods of 12.3 million people of which more than one-fourth are female and who are often considered to be among the poorest and most marginalized group on the continent."





Tech-enabled waste collection and recycling



About **Bekia**

Investor: Catalyst Fund

Bekia is a tech-enabled waste collection solution that enables companies and households to exchange their waste (plastic, paper, electronics, metals, cooking oil) in exchange for a financial incentive that is paid into a digital wallet.



“Waste pickers are the wheels of the circular economy”

World Economic Forum





Our Model

Through a mobile app (Android, iOS) and an online platform, Bekia offers users (companies and households) a way to monetize their waste via a digital wallet. This not only ensures that waste is disposed of in a safe and environmentally responsible manner, but also that it gets recycled.

On the app, users can select from among 400+ different types of valuable waste and see the proposed value based on weight. Bekia then collects the waste and provides rewards in cash on the Bekia e-wallet, with value that can be withdrawn anywhere. Once collected, the waste is split: plastic/paper is sold to recycling factories, and e-waste is handled by an in-

house technician and then resold once reconditioned (60% of it). Even used cooking oil is sold to another startup Tagaddod.

Bekia also offers corporate customers impact reports with the types and amounts of waste collected and their cash values, which they can use for their own ESG reporting since recycled waste translates into carbon mitigation. This is a powerful value proposition for corporate partners. For example, Bekia has signed a partnership with Nestle Pure Life. Under the partnership, Nestle Pure Life water bottles made 100% of recycled plastic are tagged with a QR code allowing consumers to scan them and recycle the bottles through Bekia.

What is unique about the model

To date, most of the waste in Cairo is collected by informal waste collectors. Around the world, 20 million people around the world work as waste pickers. Those collectors, in Cairo and elsewhere, push small carts and collect waste from businesses and households door-to-door. These collectors currently collect 50-60% of the city's waste and recycle 80% of everything they collect. In South Africa, waste pickers contribute 90% of post-consumer packaging and paper.

As effective as collectors are, the task of keeping up with the rubbish is nearly impossible

as global waste is forecasted to almost double by 2050. Bekia has recognized that tech and fintech can help collectors and recyclers achieve the scale that is needed to meet the recycling needs of today and tomorrow. This has benefits for the safe disposal of waste, increasing rates of recycling, and creating valuable green jobs for collectors.

Existing market structures fail to make a dent in recycling, even as the problem is becoming increasingly urgent. Waste collectors are a well-functioning recycling system that needs the power of tech to scale and meet the recycling needs of today and tomorrow.

Farmz2U

Driving sustainable agriculture in Africa



About Farmz2U

Investor: Catalyst Fund

Farmz2U is a Nigerian agtech platform that enables farmers to access personalized farming advice, affordable credit, high-quality traceable inputs, and direct buyers for their harvest through a single portal.



"Despite the contribution to the economy (30%), Nigeria's agricultural sector faces many challenges. These include: poor land tenure system, low level of irrigation farming, climate change and land degradation. Others are low technology, high production cost and poor distribution of inputs, limited financing, high post-harvest losses and poor access to markets."

FAO



The Model

Farmz2U has built a data-driven, mobile web app to offer farmers personalized farming advice (especially on regenerative farming practices), affordable financing, high-quality, and traceable inputs, as well as access to direct buyers. In effect, they have four offerings:



Insights

provides farmers with recommendations on what to grow and how. These free recommendations focus on regenerative farming, which returns organic farm waste to the land to enhance soil health and sequester carbon (CO₂).



Finance

provides financing for the inputs sold on the marketplace through a buy now pay later (BNPL) scheme in partnership with a fintech partner..



Input

fertilizers, seeds, tractor services, and other inputs from curated suppliers



Marketplace

connects farmers directly with buyers like Grocery for offtaking their produce.



"Information is power! Farmz2U's platform has been very helpful in this regard, providing information and facilitating sustainable solutions."

Farmz2U Customer



What is **unique** about the model

The agriculture market in sub-Saharan Africa will be \$1 trillion by 2030, 90% of which remains beyond digital penetration. Funding for agtech reflects this growth trajectory, reaching \$10.5B in 2021, a 58.6% year-over-year increase from 2020 and over double the amount raised in 2019.

Unlike other agtech startups, Farmz2u recognizes that changing behavior among farmers is not just a matter of providing them

with information, but rather creating an environment that includes information, support, inputs, financing, and anything else they might need. They recognize that information isn't the critical piece, in fact, they offer information for free as part of acquisition. Instead, they see their role as creating the pathway towards regenerative practices so that farmers see it as an opportunity, rather than a burden.



FLOODBASE

Predicting
flood risk for
insurance



About Floodbase

Investor: Mercy Corps Ventures

Floodbase uses flood models and satellite data to underwrite parametric flood insurance policies. Their data analytics platform can predict the size and damage of flood risk, and map floods in high-resolution, in real-time, anywhere on earth, using direct observation — at a fraction of the cost of traditional models.



"In 2013, a single flood killed 6,000 people in India, and the government didn't have flood maps that they needed to prepare for the next one. We help fix critical gaps in disaster data in developing countries so people, governments, and organizations can better prepare for, and respond to, flooding."

Bessie Schwarz
Co-Founder, Floodbase



The Model

Floodbase has developed an innovative suite of disaster analytics tools and risk transfer products that help to address the massive insurance gap in emerging markets. The company does not directly distribute insurance products at this time but instead provides cutting-edge analytics and modeling that enable other actors to create innovative insurance products, quickly respond to the needs of affected households, and make strategic decisions to limit future loss of life or property (i.e. urban planning, infrastructure).

The data and analytics created by Floodbase create the foundation for insurance coverage in areas where traditional data has

been insufficient for underwriting and payout decisions. The data analytics platform is able to predict with great accuracy the size and damage of flood risk, and map floods in high-resolution (down to 30cm) in real-time, anywhere on earth, using direct observation (e.g. remote sensing) — at a fraction of the cost of traditional monitoring mechanism. This enables insurance policies to be written in emerging markets, particularly for underserved populations at risk, impaired roads and infrastructure, and property and agricultural damage.



Floodbase is already monitoring 122 million people around the world.



What is **unique** about the model

While traditional flood models can take years to build and rely on fragmented, sparse, and expensive data, Floodbase unlocks a new suite of disaster analytics tools and risk transfer products that address the massive insurance gap in emerging markets. Predicting, monitoring, and assessing the impact of floods is particularly challenging compared to other catastrophic risks. Thus, most at-risk governments, businesses, and communities are either priced out of insurance policies or simply have no access in the first place. Recognizing the value of Floodbase's innovation, top insurers, like Willis Towers Watson and Munich Re, are partnering with Floodbase to create groundbreaking parametric flood insurance products that better protect climate-vulnerable communities.

Stakeholders can also use the venture's services to predict disasters and take precautionary and preventive measures. For example, The Republic of the Congo used the company's flood forecasting to identify floods in days instead of weeks, relocate 7,000 refugees at risk, secure millions in emergency aid, and target relief to more than 250,000 people during major emergencies. Floodbase and Willis Towers Watson have also been piloting risk transfer products in Indonesia with plans to expand in African markets.



Mercy Corps Ventures invested in Floodbase because they are addressing this critical gap in insurance for massive impact in emerging markets.



De-risking rural livelihoods with affordable insurance



About Gramcover

Investor: MSC

Gramcover is an insurtech that offers an "assisted digital" marketplace of customized insurance products for rural communities in India. Gramcover policies help smallholder farmers protect their income from external shocks including extreme weather events.



The concept of insurance didn't really exist in rural India, I realized that if we could get a distribution network in place, we'd be looking at billion-plus-person market."

Dhyanesh Bhatt | Co -
Founder, GramCover



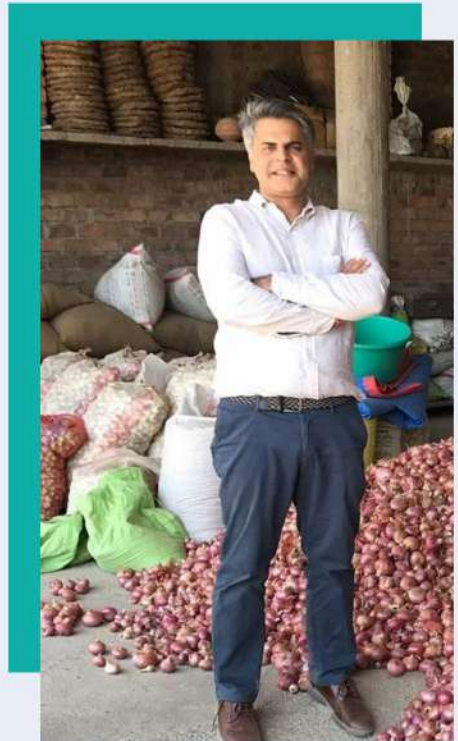
The Model

Most digital insurance marketplaces are self-service applications that are not useful for rural customers. Such customers need additional support in the field, as do insurance companies that struggle to access rural customers and data reliably.

Gramcover works differently than most marketplaces since insurance companies are their primary clients as the venture assists insurance companies to deliver weather-based index insurance products. Unlike traditional or even “digital-only” insurance brokers, Gramcover offers a wide array of services to insurance companies enabling their expansion into the rural market. In addition to sourcing customers, Gramcover helps insurance companies in product development and consumer research. It helps in the settlement of insurance claims by conducting physical verification for indemnity-based insurance products. For weather-based index insurance and parametric insurance, Gramcover’s application triggers a claim automatically when a set parameter or index is breached. Its group company, Skymet, provides the data that feeds the claim processing algorithm.

While insurance companies are Gramcover’s clients, rural communities, especially smallholder farmers and livestock owners are

the real sources of revenue. Other key stakeholders of Gramcover are village-level entrepreneurs (VLEs), social impact organizations, financial inclusion agencies, not-for-profit organizations, and government agencies and programs, that provide feet-on-street for Gramcover to bring customers on board.



What is unique about the model

Agricultural insurance is ripe to take off in India. Penetration in the agriculture sector was merely 6.73% in 2020, even as agriculture GDP is rising steadily, suggesting a growing demand for insurance. Investors recognize this growth and in 2020, the insurtech industry attracted \$7.5 billion globally. In India, Gramcover raised USD 7 million in Series A from venture capital investors and companies.

Farmers, especially smallholder farmers have limited disposable income to spend on insurance products. Therefore, insurtech must overcome the challenge of delivering value at an affordable price point. Gramcover has achieved this by providing valuable services to the insurers themselves.



MERIDIA

Unlocking
land value for
climate-
vulnerable
farmers



About Meridia

Investor: Mercy Corps Ventures

Meridia is an end-to-end solution for land and property documentation in emerging markets. By providing formal land titles, Meridia gives smallholder farmers tenure security and the opportunity to access tools to improve their livelihoods and expand production. Meridia also delivers value to huge agribusinesses given their extensive dataset of tens of thousands of land parcels.



"Land ownership has a positive effect on the decision to adopt any adaptation strategy. Subsequently, securing farmers' property rights would help to enhance their capacity to adapt to climate change."

[Land Use Policy Report](#)





Our Model

Meridia's proprietary data collection, surveying, and land documentation platform make land surveying simple, high quality, compliant, and low cost. Their technology is flexible, can be deployed globally, is firmly field-tested (with offline capability), and seamlessly integrates with drone and remote sensing data streams. Drastically bringing down the cost of surveying and land document production has allowed Meridia to offer this service to millions of landholders.

The company leverages a B2B sales model, using specific strategic partners to access groups of rural households and gain economies of scale. Such partners, like commodity buyers, can reach replanting, rehabilitation, and traceability targets and governments can provide large-scale rural and peri-urban documentation.



"Now you can take the documents to the court, to the chief's palace, to the police station. The moment you pick up the documents, it gives a feeling of security."

Meridia Customer

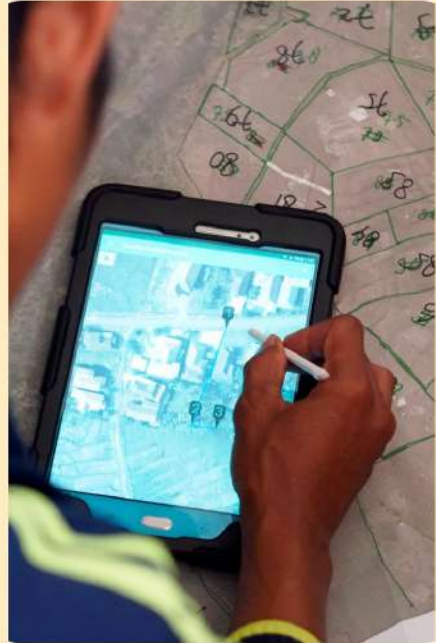


What is **unique** about the model

Meridia is positioned at the confluence of a few major trends in agribusiness, solving problems faced by various stakeholders. To start, government regulators and consumers are demanding more supply chain transparency, even as agribusinesses simultaneously are competing to more directly engage, train, and retain smallholder farmers as partners, suppliers, and customers. Moreover, in tree crops like cocoa, palm, and tea, smallholders' productivity is declining as the trees age. Coupled with climate change, agribusinesses are grappling with an existential crisis in their supply chains: limited projected supply and lower quality.

Mapping and clear land tenure can help to address many of these challenges. Agribusinesses need valid data on who is producing what and where in order to increase engagement with their farmer suppliers/customers. With maps, they know how to deploy resources to increase productivity and information flows. Furthermore, with land tenure, farmers have greater incentive and ability to take on financial risk and invest in their land.

Mercy Corps Ventures invested in Meridia as their land mapping and documentation services deliver major value to agribusinesses and smallholders on various fronts. Moreover, they are building an incredibly rich, validated agricultural dataset of tens of thousands of land parcels that could unlock further value-added services when coupled with emerging remote sensing and precision agriculture technology going forward.



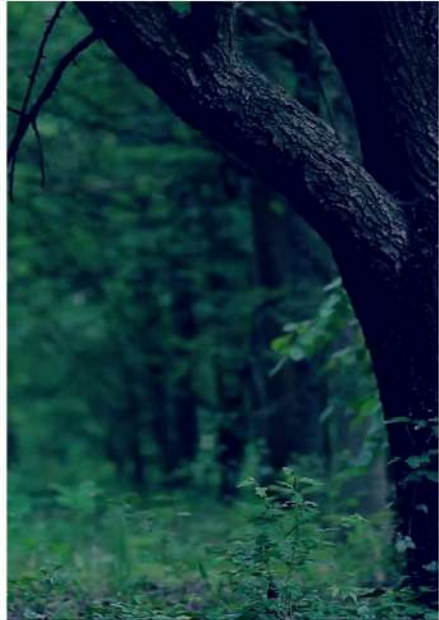


Scaling and financing reforestation through Web3

About **Open Forest Protocol**

Investor: Mercy Corps Ventures

Open Forest Protocol (OFP) is a comprehensive blockchain solution for forestation projects and the monitoring, reporting, and verification (MRV) of nature-based carbon removal. The protocol offers the opportunity for a community of stakeholders to create a uniform way to upload data and, as a result, standardize how tree data is uploaded, processed, and managed. By 2030, OFP is targeting 10,000,000 hectares to be managed for delivering carbon credits.



“Through OFP we're able to invert a lot of how traditional reforestation has been done. Traditional reforestation is opaque — with OFP we make it open.

Michael Kelly — CPO,
Open Forest Protocol



The Model

OFP has built a comprehensive blockchain solution for reforestation projects and MRV of nature-based carbon removal. The company offers mobile and web applications for data uploads from the field, a blockchain-based structure for trustless verification of environmental data, and resultant open-source data upon which climate solutions can be built. The protocol is permissionless and built on the NEAR blockchain, thereby providing greater transparency and security than a traditional data ledger.

Traditional MRV solutions require expensive consulting and project teams. In contrast, OFP allows anyone from around the world to start a reforestation project, credibly report its progress, and therefore be in a position to access carbon financing. Being open and permissionless allows a community of stakeholders to create a uniform way of data upload and as a result standardize how tree data is uploaded, processed, and managed.

The blockchain provides a robust foundation for integrating future technologies into the protocol. Beyond software integrations with other IT systems, it is capable of managing and integrating data from satellite imagery, drone technology, AI & IoT devices.

Aligning carbon sequestration data on a distributed ledger also provides a unique opportunity to tokenize a credit of carbon in a fully decentralized manner. Carbon credit offsets can be exercisable on-chain where relevant credits are burned (retired) and a timestamped certificate gets generated to ensure credits can no longer be claimed against future emissions.



What is unique about the model

OPF's solution straddles two very different worlds that are equally important: the climate movement of nature-based solutions and carbon markets, and the crypto world of smart contracts and distributed ledgers. OPF joins existing on-chain solutions (ie, Toucan, Klima, Flow Carbon, Regen Network), but goes further by addressing the critical supply issue. Their competitors simply bridge credits from the existing analog, inefficient, and expensive system on-chain. This distinction explains why, to date, OPF has actually outraised them.

Mercy Corps Ventures invested in OPF because its value proposition is desperately needed. Traditional solutions tend to exclude small projects given the fixed costs of MRV. The protocol creates a new market for small and medium-sized projects to access carbon accreditation given its blockchain system for certifying nature-based carbon removal.

With the protocol, communities can access carbon credit markets. Carbon is rewarded in a recurring and transparent manner and credits are issued only after forest data has been uploaded and communally verified on-chain. Carbon credits can also be burned (retired) on-chain to ensure that double spending is not possible. On top of this, OPF is a scalable infrastructure for connecting best reporting practices with carbon accreditation and project financing in a transparent, and iterative manner.



Reimagining the landscape of agricultural insurance



About Pula

Investor: Mercy Corps Ventures

Pula designs and delivers innovative agricultural insurance and digital products to help smallholder farmers manage yield risks, improve farming practices, and grow their incomes over time. Pula's unique offering is that they distribute the product through partners engaged in increasing farmer resilience, strengthening the entire value chain. As of June 2021, Pula has 70 distribution partners, 49 insurance partners, and 21 reinsurance partners.



"We are providing a valued service and gluing together all the different partners so that insurance exists. Most of the places we work, insurance never existed"

Rose Goslinga | Co-
Founder &
President, Pula



The Model

Pula is radically restructuring agricultural insurance, using technology to bring coverage to previously unbanked, uninsured smallholders worldwide. Pula works with large input and agriculture supply companies, global NGOs, microfinance institutions, research institutions, and governments to provide smallholders with the protection and advice they need in an increasingly unpredictable climate. Pula works in 17 countries across sub-Saharan Africa, Asia, and Latin America and over seven years has insured 6.6 million farmers to the sum of \$1.1 billion.



“[Pula’s] key strength is that they build value for their distribution channel by helping them understand their customer base better. Insurance is a data business and they collect the data at registration to create business insights for the distribution channel (eg. seed company). The channel then becomes a champion for the insurance product and in most cases willing to subsidize it.”

Josh Ling | Fund Manager,
Asian Development Bank



The company provides insurance to farmers when they buy inputs like seeds or fertilizer. If a payout event happens, the farmer receives a new bag of seeds (or other input) to replant. As such, the insured amount is relatively low. Moreover, the customer doesn’t pay the cost of the coverage. It is covered by the seed company, which pays the premium to differentiate its product from competitors and because they receive additional sales of seeds in the event of a payout. The insurance is underwritten by third-party insurers/reinsurers and Pula serves as the intermediary that collects data on the farmers to issue policies. That data is also helpful to seed providers/vendors.

What is **unique** about the model

Farmers face a range of risks like heat, rainfall, pests, and more, all of which may be exacerbated by climate change. Crop insurance can help protect farmers from several of these risks — but, as a relatively new and extremely complex product, faces challenges of its own, including: reaching farmers, gaining their trust, and educating them on the product.

Mercy Corps Ventures invested in Pula's because of its unique recognition that none of these key challenges have to do with policy

specifications, but rather with farmer engagement. This recognition has allowed Pula to focus on distribution, farmer uptake, and retention - key challenges that all microinsurance companies face - rather than getting bogged down in product development and risk management like other companies. Pula is able to offset the high costs of educating consumers, overcoming related stigma, and building trust by providing value to partners upstream, namely insurers and input providers.



Radically
rethinking
supply chain
traceability



About Topl

Investor: Mercy Corps Ventures

Topl is a blockchain protocol that provides traceability and transparency into how businesses engage with, prove, market, and monetize sustainable practices. There is a huge opportunity to empower companies to build brand equity by demonstrating new ways they extend value to workers at origin, improve accountability above smallholder farmers, and push back against 'greenwashing'.



"Topl believes that economic and social goals can be complementary instead of competitive, that profit should drive impact — and vice versa.

Kim Raath | Founder, Topl



The Model

Topl has created a lightweight, full-stack blockchain, that aims to revolutionize how businesses engage with, prove, market, and monetize sustainable practices. Their blockchain is fast, works on a feature phone, and is public and permissionless — a key differentiator relative to other traditional traceability solutions that leverage a central database. The Topl blockchain streamlines the exchange of data on funds, goods, and certification claims all into one transaction. For example, the company's solution is powering FairFood's Trace platform, which has tracked over 120,000kg of living-wage nutmeg and 40,000kg of living-wage coffee.

In fragmented supply chains where real-time intelligence is imperative for managing costs, quality or other factors, Topl allows all actors to reliably validate and cross-validate data. By providing a visible ledger of transactions relating to asset ownership, product condition, and location, Topl facilitates the traceability of produced goods and the identity of the parties involved.



Farmers and other workers

can demand higher prices for their production as they will be able to transform their verified production history and practices into the ability to access value-add services (finance, advisory), new markets, etc.



Traders and brands along supply chain

can reduce the cost of certification and audit processes while simultaneously increasing the reliability and transparency of such certifications. This in turn should lead to value-creation for other supply chain actors.



For investors and capital markets,

Topl is working to usher in impact as an asset class and drive capital toward companies with transparent/public and verifiable impact (ESG practices).

Ultimately, Topl can decrease supply chain risk, wastage, and spoilage, thereby increasing brand equity and providing access to value-added services and other life-enhancing opportunities for smallholder farmers.

What is unique about the model

Mercy Corps Ventures invested in Top1 because it provides a right-fit, thoughtfully-designed foundation by which companies can address many of today's pressing food systems issues. While the impact is indirect, this is the critical infrastructure that is needed to create supply chains where smallholder farmers and workers at origin can thrive, and has the potential to be a crucial enabler for companies that are committed to sustainability, be it out of self-interest, compliance, or as core to their model.





Transforming India's food value chain



About WayCool

Investor: Gawa Capital

WayCool is India's largest and fastest-growing agri-tech company, procuring fresh agricultural produce directly from over 200,000 farmers and seamlessly delivering it to over 125,000 MSMEs in the trade and food services spaces, like kirana shops, offering them quality products and advising them on consumer preference. WayCool leverages tech at each stage of the food value chain, combining soil tech, seed tech, farm tech, processing tech, distribution tech, retail tech, consumer tech, and fintech to create transparency and intelligence across the ecosystem.



"We apparently look like a complex company, but every one of us is relentlessly focussed on the supply chain. In reality, we're a very simple company"

Karthik Jayaraman | Co-
Founder and CEO of
WayCool Foods



The Model

WayCool's objective is to enhance the resilience of the Indian farming community, offering technological intervention and advisory to help small and marginal farmers attain sustainable incomes. To intervene across the supply chain, WayCool has innovated a tech-enabled approach, merging the physical and digital worlds by deploying advanced technologies such as robotics, artificial intelligence (AI), machine learning (ML), and deep learning (DL) to control and improve product sourcing, food processing, branding and marketing, last mile distribution, and use of farm inputs.

The model has various components: through its farmer engagement program 'Outgrow', the company engages with thousands of farmers in the pre-harvest supply chain, supporting input planning, cultivation practices, and post-harvest processes. It then purchases fresh produce (fruits and vegetables), staples, and milk from smallholder farmers and Farmer Producer Organizations (FPO) (54% of product), and delivers them to retailers and traders. Working with farmers is complex so WayCool combines a series of interventions:



Advisory input: Based on crop variety, advisory inputs are identified and communicated to the farmers during the entire crop duration as part of a "package of practice".



On-field agronomists: Experts educate farmers on the best cultivation practices.



Outgrow mobile application: An app complements the field staff and provides updates, videos, and SMS alerts about weather data, regenerative agriculture practices, pest and disease management, and more.



Model farms: The Outgrow Agriculture Research Station (OARS) are four-acre model farms where farmers can practice and study regenerative farming to learn how to improve income, reduce agricultural emissions, and build resilience to climate change impacts. The farms demonstrate how regenerative and natural agriculture practices can improve profitability.



Farmer testimonials: Share success stories from farmers in the local region who work closely connected with the rest of the farmers.



Guaranteed buyback: The venture has a formal agreement to purchase the produce that meets WayCool specifications.



Transparency: The app shares information about handling, transportation, and payments to the farmers.

What is unique about the model

WayCool leverages technology and innovation to improve logistics and distribution services and achieve end-to-end oversight across the food value chain. Furthermore, the venture is addressing its own climate impact by leveraging renewable energy, improving water use, and reforestation. For example, the team has installed 100.5 kW solar roof-top capacity installations, improving the share of renewable power usage to 6.1% and avoiding more than 65,000 kg of GHG emissions. Similarly, the team now counts 100 electric vehicles, accounting for 21% of the last mile fleet, 353,293 km of green travel distance, and avoiding 85,200 kg of GHG emissions. Recently, the venture also became a member of the EV100 Campaign (Climate Group) with a commitment to transition to 100% EVs by 2030.

On water management, the team has installed a water treatment capacity of 84.5 KLD, accounting for about 3.34 million liters of wastewater treated and reused, and 26.7% of water use.

Furthermore, the venture has supported two forestation projects using the Miyawaki urban forest technique for a total area of 34,660 sq. ft, including over 10,000+ saplings planted and 100+ species varieties. This will create a carbon offset potential of 600 tons upon full growth.



The Climate Innovation for Adaptation and Resilience (CIFAR) aims to accelerate responsible innovation in digital finance for climate adaptation and resilience and catalyze capital in this emerging sector. For more information please visit:

<https://www.cifaralliance.org/>