



PROGRESS REPORT 2022

# The Climate Transformation Fund



The Climate Transformation Fund is an initiative by Milkywire, in collaboration with WRLD Foundation Sweden and WRLD Foundation US. Milkywire is a digital platform that enables discovery, support, and engagement with top impact projects globally to fight climate change and protect the Earth.

Thank you to our donors, in particular Klarna, that currently is the main financier of the Climate Transformation Fund.

AUGUST 2022



Thermogravimetric analysis on carbonates  
Photo by Heirloom

## INTRODUCTION

# Year one of the CTF

A wide range of solutions will need to be deployed to solve the climate crisis and reach global net zero emissions.

For example, forests need to be protected and restored, new energy solutions introduced, politicians need to be convinced to stop supporting fossil fuels, and carbon dioxide must be removed from the atmosphere and stored securely.

Companies can help facilitate this by creating more climate-friendly products, changing their supply chains, and influencing customers and decision-makers. But companies also have a crucial role as funders of external climate projects. By giving well-targeted financial support to effective climate solutions, companies can help accelerate the green transition and reach global net zero. The support should be allocated to where it is most needed and will create the most positive climate impact, and not just focused on enabling companies to make claims.

To help make this happen, Milkywire has set up the Climate Transformation Fund (CTF). The donation fund focuses on long-term global impact and tries to support the most cost-effective and sustainable climate solutions for reaching global net zero. That means supporting new and unproven technologies incorporating projects within durable carbon removal, supporting advocacy and policy to reduce emissions, and scaling up proven effective solutions such as sustainable projects focused on nature restoration and protection.

The CTF was created together with Klarna but was designed to be open for other companies and individuals to support. The first round of support within the fund was given in October 2021. This report details how the projects have progressed since then.

Since many projects have long-term targets, it is too early to provide final assessments on the projects' climate impact. However, we can assess their results to date and examine their progress relative to their set key performance indicators.

This is the first progress report in what we hope will be a series of many.



**ROBERT HÖGLUND**  
FUND MANAGER, CTF

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# Durable carbon removal

The world has reached a stage where emissions reductions are not enough; we also have to remove and durably store away carbon. The solutions for doing so are employed at tiny scales or are still just ideas, but giving early support to carbon removal can help kickstart the sector and make it an affordable and climate-relevant solution in the future.



HIGHLIGHTS

Read more about them in-depth on the next few pages.

**< 3**

The number of days it takes for Heirloom to capture carbon.

**4k**

The tons of CO<sub>2</sub> that Climeworks' facility in Iceland can remove per year.

**23**

The percentage of increased crop yields seen by farmers when using biochar.



# Heirloom

Heirloom is a company developing promising, novel technology to extract CO<sub>2</sub> directly from the air using limestone. The process starts by maximizing the mineral surface area exposed to the ambient air. Then, after absorbing CO<sub>2</sub> like a sponge, the minerals are heated, releasing the CO<sub>2</sub> from the mineral to be captured and stored permanently underground.

Their goal is to be able to do this at the cost of less than \$50 per ton. Being an early customer is helping them capture their first tons and get started on their journey to remove and store CO<sub>2</sub> cheaply and at scale. As a result, 74 tons of CO<sub>2</sub> removed were purchased in total.

## Motivation for including Heirloom

Heirloom's technology is safe, peer-reviewed (1), scalable, and has the potential to become a cheap way of permanently storing CO<sub>2</sub>. At the same time, the costs of removing their first tons are very high, and they need early adopters that can tolerate a high price tag in exchange for the potential for a high catalytic effect.

## Progress

Since we made our first pre-purchase of carbon removal from Heirloom, the company has made progress in several aspects. In March 2022, they raised \$53 million in equity from Carbon Direct, Ahren



Supported in 2021 and pending support for 2022  
www.heirloomcarbon.com  
Limestone. Photo by Heirloom

Innovation Capital, and Breakthrough Energy Ventures, among others. They have also made significant progress in their technological development. For example, 10 months after launching, they have successfully accelerated the step where CO<sub>2</sub> is captured from the air, from 4 weeks to under 3 days. This is an important step in enabling low-cost direct air capture. The progress was highlighted in their white paper published in March 2022, where their approach is described in detail. Heirloom was also selected as one of 15 XPRIZE Elon Musk Foundation Carbon Removal prize winners, which is a vote of confidence in the company and the method they are using.

We were one of Heirloom's first customers and the first customers in Europe. Early pre-purchases have given Heirloom the ability to build its pilot plant and conduct the research needed to improve the technology and bring down costs.

The carbon removal we purchased from Heirloom in 2021 will be delivered by 2024 at the latest from their first direct air capture facility, and the CO<sub>2</sub> will be stored permanently underground.



Inside Heirloom Kiln facility  
Photo by Heirloom

(1) Ambient weathering of magnesium oxide for CO<sub>2</sub> removal from air, McQueen et al. Nature Communications (2020)



## ORCA, ICELAND

# Climeworks

Climeworks empowers people to reverse climate change by permanently removing carbon dioxide from the air with its direct air capture technology. The air-captured CO<sub>2</sub> is returned to earth to be stored safely and permanently for millions of years.

## Motivation for including Climeworks

We chose Climeworks due to the high quality of the solution. Climeworks uses renewable energy in Iceland to store CO<sub>2</sub> permanently without any direct side effects. Their solution has been analyzed in a peer-reviewed LCA (2). To scale direct air capture to the climate-relevant level required, market demand for carbon dioxide removal must be created to show there is a growing interest in such solutions. Our support contributes to building a critical mass of customers required for this scale-up. Climeworks is also recommended by Giving Green.

## Progress

In September 2021, Climeworks launched its Orca facility in Iceland, the first-ever, real-life direct air capture and storage plant in commercial operation. The facility has a nominal capture capacity of 4000 tons per year, and the CO<sub>2</sub> is stored underground and mineralized by Climeworks' partner Carbfix.

Climeworks has been able to secure purchase agreements from a long list of large companies such as Swiss Re, Audi, BCG, LGT, Microsoft, Shopify, Square, The Economist Group, and Zendesk. They also took in an equity round of \$650 million in April 2022 – the largest sum ever raised by a carbon removal company.

Climeworks also arranges the Direct Air Capture Summit bringing together key players and experts in the field. The third iteration was held in June 2022.

The total amount of carbon removal we purchased in 2021 will be delivered later this decade.



(2) Deutz, S., Bartow, A. Life-cycle assessment of an industrial direct air capture process based on temperature-vacuum swing adsorption. *Nat Energy* 6, 203-213 (2021). [Link](#)



# HUSK

When you grow rice, you get leftover husks that can either be burnt or decomposed, releasing the carbon stored in the plant. HUSK in Cambodia creates biochar from the rice husks instead, stabilizing the carbon. Together with nutrients, organic farmers use this biochar as fertilizer, restoring soil health and increasing yields. Our support is helping HUSK build its second biochar facility. As a result, 1012 tons of CO<sub>2</sub> removed were purchased in total.

## Motivation for including HUSK

HUSK uses a feedstock (rice husk) that would otherwise have rapidly decomposed when used as chicken bedding or burnt. It transforms it into biochar to create a fertilizer sold to organic farmers, increasing yields significantly. Their model contributes to increasing

farmers' incomes, restoring soils, and removing carbon. There is considerable potential for them to scale up, but they need more customers for their carbon removal certificates for that to happen.

## Progress

HUSK is scaling up quickly from its infancy. In 2021 they removed 126 tons of CO<sub>2</sub> with biochar using their first pyrolysis unit. They also installed their second unit, which dramatically increased their production capacity. The machines are installed at the AMRU rice mill in Cambodia. They have big plans for the coming years and are looking to scale up the process to tens of thousands of tons.

HUSK has been running field trials on their biochar product for farmers during the year. Farmers see an average yield increase for all crops from using HUSK biochar of 26% and have a 23% average income improvement. Results from blending biochar with organic fertilizer are having an even larger effect on yield increases.

The income from biochar carbon removal certificates enables HUSK to finance the biochar production and add biochar to their organic fertilizer sold to small-scale farmers. Even though biochar has large positive effects on soils and leads to increased yields, small-scale farmers cannot carry the cost of industrial biochar production, and there is a need for external finance.

The full amount of carbon removal purchased by us in 2021 will be delivered by the end of 2023 at the latest.



Seedlings. Photo by HUSK



MAHARASHTRA, INDIA

# MASH Makes

MASH Makes creates biochar from leftover biomass. The company is active in India, targeting regions with arid and semi-arid soils that benefit significantly from the added biochar. This process creates carbon storage and simultaneously contributes to reduced air pollution, using agricultural residues that would otherwise have been burnt. Our support is helping them build their second biochar facility and enabling MASH to remediate the lands involved for farming, thereby enhancing the livelihoods of the local community.

All carbon removal credits created in this project were issued through a fully-digitized marketplace and platform, Carbonfuture, whose science-based approach ensures the carbon sink certificates generated remain traceable, transparent, and thus trustworthy. As a result, 858 tons of CO<sub>2</sub> removed were purchased in total.

## Motivation for including MASH

This project has a large number of important co-benefits. Reduced air pollution, remediated soils, increased crop yields, carbon removal, and lesser dependence on traditional NPK fertilizers and irrigation.

In addition, the project targets drought-prone regions and aims to address a core issue of crop residue burning in India by providing a carbon-negative and easily scalable solution. Scalability is driven by MASH's decentralized, modular, and cost-effective approach to biochar production and application.

## Progress

Our purchase of biochar-based carbon removal certificates through the Carbonfuture platform has provided the basis for validating MASH Makes' technology.



Supported in 2021 and pending support for 2022

[www.mashmakes.com/offset](http://www.mashmakes.com/offset)

Photo by MASH Makes

MASH reports that the support has been instrumental in setting up a scalable Special Purpose Vehicle model for producing biochar from various agricultural residues worldwide. MASH plans to roll out 4 machines as part of the first SPV located in India and then scale up to 50+ machines per year as part of SPVs in developing countries and regions where agricultural waste, crop residues, and by-products of agro-processing are not valorized. Each machine will have the capacity to convert ~19 tons of agricultural residue into biochar per day, resulting in a capacity of ~6000 tons CO<sub>2</sub>e per machine per year.

The biochar produced can be used for a variety of different activities, including tree plantation projects in rural and urban locations, soil remediation projects in regions with arid and semi-arid soils, and conventional and organic agricultural projects once Mash receives the appropriate EBC certification.

The full amount of carbon removal purchased by us in 2021 will be delivered by the end of 2023 at the latest.



# Biochar

## MOTIVATION FOR USING BIOCHAR AS A CARBON REMOVAL SOLUTION

Biochar is a carbon removal solution with the potential for significant co-benefits. If applied to degraded soils, it can increase yields significantly. It can also lower emissions of other greenhouse gasses from soils (3, 4). When using feedstocks that would have decomposed quickly if not for the biochar production, the positive effect on climate is rapid.

Biochar is not as permanent a storage solution as, for example, direct air capture. Still, the available science points to a potential storage time for a majority of the carbon of well over 100 years for quality biochar made with high temperatures (5, 6, 7, 8). However, there are some uncertainties around how different feedstocks, soil types, and soil temperatures affect the permanence (8, 9). The darkening of the soil when applying biochar could decrease its climate benefit somewhat, but soils covered with crops throughout the year would minimize this (10).

The biochar carbon removal certificates bought through HUSK and Carbonfuture/MASH are EBC-sink certified, which stipulates the quality of the biochar, how it must be produced, and the final use (11). The EBC also does what they consider a conservative calculation of the permanence of the biochar, assuming 74% of the carbon remains after 100 years.

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(3) Biochar in agriculture - A systematic review of 26 global meta-analyses (Schmidt et al 2021).

(4) How biochar works, and when it doesn't: A review of mechanisms controlling soil and plant responses to biochar. (Joseph, Cowie, et al 2021).

(5) Feedstock choice, pyrolysis temperature, and type influence biochar characteristics: a comprehensive meta-data analysis review, Ippolito et al (2020) (Also see references 3 and 4)

(6) Stability of biochar in soil." In Biochar for environmental management, Lehmann, Johannes, Claudia Czimczik, David Laird, and Saran Sohi, pp. 215-238. Routledge, (2012).

(7) IPCC: Appendix 4 Method for Estimating the Change in Mineral Soil Organic Carbon Stocks from Biochar Amendments: Basis for Future Methodological Development (2019)

(8) Greenhouse Gas Inventory Model for Biochar Additions to Soil (2021), Woolf et al. <https://pubs.acs.org/doi/10.1021/acs.est.1c02425>

(9) Pyrogenic carbon capture and storage. Schmidt et al (2018).

(10) Albedo Impact on the Suitability of Biochar Systems To Mitigate Global Warming. Meyer (2012).

(11) EBC-Guidelines for the Certification of Biochar Based Carbon Sinks Version 2.1. Schmidt, Kammann, Hagemann (2021)



# The Carbon Removal ClimAccelerator Program

While identifying projects, it became evident to us that there is a need for many more companies to develop carbon removal solutions. In 2021, two research institutions, TU Delft and ETH Zurich partnered with Climate KIC and other partners to create an accelerator for new European carbon removal startups to develop new solutions. The accelerator consists of dedicated coaching and mentoring, expert sessions with leaders from the CDR ecosystem, systemic and techno-economic climate impact support, and non-dilutive funding of € 5000 (stage 1) and € 20,000 (stage 2) to be spent on their ventures. Our support contributed to getting the initiative off the ground.

## Motivation for including The ClimAccelerator Program

By supporting an accelerator program specifically devoted to carbon removal companies, we helped get more shots on target. In addition, our funding for the program was matched by Climate KIC, helping to get more money for new carbon removal solutions.

## Progress

The programs received 99 applications, and 26 startups were selected for the accelerator. Of these, the 14 most promising moved on to the next phase of the program. The accelerator's first cohort will come to an end in September 2022.

Most of the teams are continuing to make progress, with 25 of the 26 still active as of May 2022. Several of them have started to sell carbon removal to paying customers. Four of the teams were among the list of qualified competitors for the Xprize carbon removal prize. One of the accelerator companies, Neustark, was nominated for the Swiss Green Business Award, sold carbon removal to Microsoft and Verdane, and published a Gold Standard methodology on their method of storing CO<sub>2</sub> in concrete. Several of the startups have also received outside funding, including Pina Earth, which received \$500 000 from Y Combinator. The program continues as the second cohort took off in March 2022, and a third is planned for fall 2022.

[www.cdr-accelerator.com](http://www.cdr-accelerator.com)

Supported in 2021

Photo by Krivec Ales





# Protecting & restoring nature

Deforestation and the destruction of ecosystems cause great harm and release large amounts of carbon. Preserving the carbon in existing ecosystems and restoring carbon to lost ones are key requirements for keeping catastrophic climate change at bay and is an area where more climate finance is needed.



## HIGHLIGHTS

Read more about them in-depth on the next few pages.

**1,2k**

The number of farmers engaged in WithOneSeed.

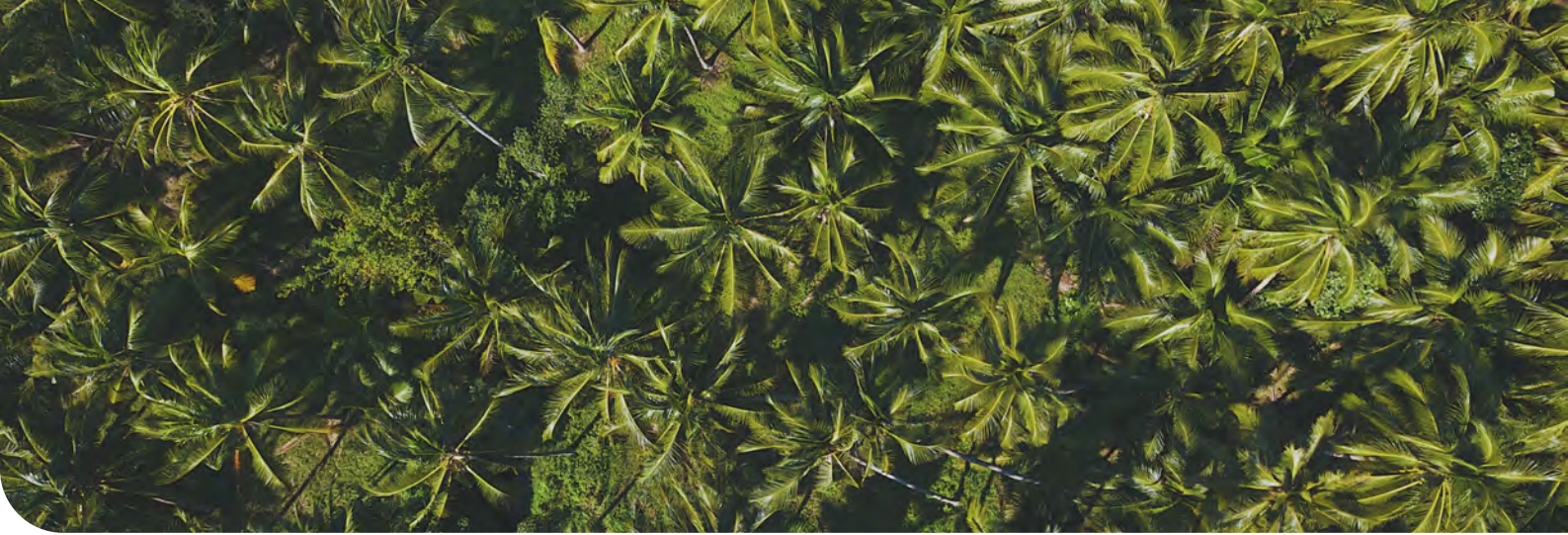
**53k**

The number of trees is expected to regenerate with the help of the FMNR method.

**700k**

The estimated tons of CO<sub>2</sub> that are held in Warsi-protected forests in Indonesia.





TIMOR LESTE

# WithOneSeed

WithOneSeed is employing a unique approach to forestation, paying small-scale farmers in Timor Leste to grow and maintain new trees on their land. The farmers get paid every year to take care of the trees, with each tree being tracked via an RFID chip and visited by project staff each year. This Gold Standard certified project has led to significantly higher incomes for the local population and captures CO<sub>2</sub> sustainably. 3366 tons of Gold Standard certified credits were purchased and retired from the project.

## Motivation for including WithOneSeed

Reforestation can be an effective carbon removal solution if implemented correctly. The fact that WithOneSeed continuously pays farmers to take care of the planted trees is an integral part of why we chose them. So often, the people who plant trees are left with the cost of taking care of them, harming the individual farmer and leading to more trees dying. WithOneSeed works closely with communities, increasing their incomes and achieving impressive results regarding tree survival. They also have a follow-up model where each tree has an RFID chip, and each farmer is visited by project staff every year.

## Progress

We supported WithOneSeed by purchasing ex-post carbon credits, meaning that the carbon paid for is already sequestered in trees. The income generated with sold credits goes to farmers to provide them with financial incentives to take care of planted trees.

WithOneSeed has already engaged 1200 farmers in Timor Leste, and many doubled their income through participating in the program. The first farmers who joined the program as early as 2010 are still planting and taking care of trees on their land. Their successful approach allowed them to secure funding from the EU in partnership with Oxfam and 4 new projects are in preparation. This means WithOneSeed will reach out to new communities and has enough funding to help them with initial investments to build nurseries, plant trees, and care for them.

Supported in 2021 and a small purchase of credits in 2022 connected to last year's purchase.

[www.withoneseed.org.au](http://www.withoneseed.org.au)

Photo by Chevanon Photography





Supported in 2021 and 2022  
[www.justdiggit.org/work/tanzania-dodoma](http://www.justdiggit.org/work/tanzania-dodoma)  
A 2 year-old tree, Tanzania  
Photo by Justdiggit

DODOMA, TANZANIA

# Justdiggit

Many small-scale farmers in warm countries would like to have more trees on their farms. These trees contribute to more water remaining in the ground and create shade for plants to grow. Justdiggit and their partner LEAD Foundation are teaching farmers to use simple and natural methods to grow the tree stumps, shrubs, and bushes they already have into mature trees. Our support for the project is estimated to lead to 20 000 tons of CO<sub>2</sub> being captured in 20 years.

## Motivation for including Justdiggit

Justdiggit is using a method called farmer-managed natural regeneration (FMNR). Many of the pitfalls of reforestation are avoided by enhancing the growth of the small trees farmers already have on their land. There is evidence for FMNR's positive effects on incomes, biodiversity, and carbon capture (11, 12). Justdiggit also has an impressive track record and is working long-term with the farmers, following up on the project for 20 years. This project is also part of the World Resource Institutes' (WRI) Terramatch service, which includes vetting by the WRI.

## Progress

With the support from the Milkywire Climate Transformation Fund, Justdiggit managed to expand its activities to several new villages in Central Tanzania. They expect to reach out to about 1200 farming households by the end of September 2022. The main focus of their activities until then will be on selecting champion farmers, basic FMNR training for selected farmers, the start of community awareness events, and video tours. This will help bring about 53 000 trees to a mature state and positively affect the livelihoods of 5600 people. In addition to training in FMNR techniques, farmers will be taught to apply rainwater harvesting methods to increase soil quality through improved water retention and prevent soil erosion and flooding.

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(11) Dryland tree management for improved household livelihoods: Farmer managed natural regeneration in Niger, Haglund et al (2011).

(12) Effects of farmer-managed natural regeneration on livelihoods in semi-arid West Africa, Binam et al, *Environ Econ Policy Stud.* (2015)



## INDONESIA

# Warsi

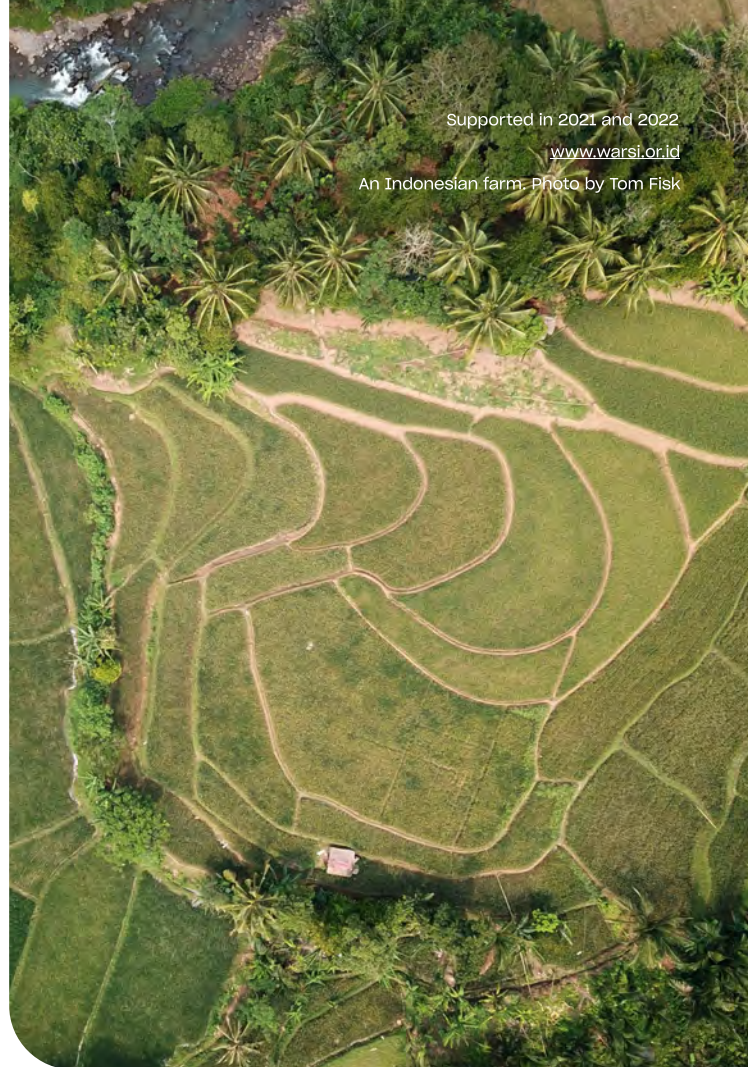
It's a huge problem that rainforests are being cut down to, for example, make room for palm oil plantations or livestock. Stopping deforestation is one of the key aspects of solving the climate crisis. Warsi in Indonesia helps local communities get forestry licenses for their land, so they have the legal rights to it and can prevent it from being cut down. Our support enables them to create new projects and protect approximately 40,000 hectares through community land tenure in 4 villages. In total, the project's estimated carbon dioxide emissions prevented through deforestation is over 1 million tons of CO<sub>2</sub>. (13)

## Motivation for including Warsi

Giving local communities the right to their land is a method that has proven successful in reducing deforestation (14, 15, 16, 17). Warsi has a long track record of successfully helping local communities access forestry licenses to protect their lands. They are also a long-standing partner of the Rainforest Foundation Norway, one of the world's leading NGOs engaged in rainforest protection. By funding this project, we help them expand Warsi's work into new areas in Indonesia.

## Progress

The project has advanced their agreement with communities from four villages (Pelancau, Metut, Nahakramoh Baru, and Tanjung Nanga) in the Malinau Selatan Ulu sub-district to set up village administration boundaries and develop a Village Information System (VIS), an essential step to having their rights legalized by the District government. This was achieved at a workshop that provided a meeting space for all involved parties to build a mutual understanding in completing the boundaries of village administration. Recognizing the community land rights will put approximately 40,000 hectares under direct community governance.



The next steps for completing the legalization process include mapping and agreeing on overlapping boundaries between the villages and the final formalization of the legal rights. This is expected to be finalized by December 2022 at the latest.

(13) This number does not include potential leakage, although the risk in this context is not deemed to be high. It should also be noted that the carbon kept in forests due to avoided deforestation is not necessarily protected forever. If conditions change, deforestation can accelerate at a later time, and the carbon will be lost. To ensure that the forest stays protected, continued efforts and support are needed.

(14) [Does secure land tenure save forests? A meta-analysis of the relationship between land tenure and tropical deforestation.](#), Robinson et al (2014)

(15) [Community managed forests and forest protected areas: An assessment of their conservation effectiveness across the tropics](#), Porter-Bolland et al (2012)

(16) [Geospatial Data Brings Indigenous and Community Lands to the Forefront of Forest Management](#), Webb et al (2020)

(17) [Collective property rights reduce deforestation in the Brazilian Amazon](#), Baragwanath, Bayi (2020)





# Decarbonization

There is a need to support efforts that can reduce emissions. Change is not happening fast enough on its own. A high-impact way of accelerating emission reductions is supporting effective organizations influencing decision makers to implement more ambitious climate policies. Another is to support innovation in new fossil-free energy solutions in niches where market forces are not providing the necessary funds.



## HIGHLIGHTS

Read more about them in-depth on the next few pages.

# 50k

The number of people on Mafia Island that could be provided with clean power, thanks to Atmosfair & Kisiwa Farming.

# 20

The number of countries and institutions that have committed to ending public financing of fossil fuels, thanks in part to Human Rights Watch.

# 570M

The number of people in sub-Saharan Africa without access to electricity (2019).  
CATF is doing the groundwork to fill this gap with clean, fossil-free energy.



# Biomass gasifier atmosfair & Kisiwa Farming Limited

50,000 people live on Mafia Island in Tanzania. However, as it is not connected to the national electricity grid on the mainland, it is almost entirely dependent on diesel generators. A new renewable power source is being developed by a local company, utilizing residues from old, unproductive coconut trees and native coppice crops, gasified to generate electricity and heat.

Our support enables this project to get off the ground and scale up. The renewable energy provided reduces the amount of diesel burnt, leading to lower emissions. The estimated avoided CO<sub>2</sub> emissions thanks to our support to the pilot phase of this project is approximately 3500t/CO<sub>2</sub> over 10 years.

## Motivation for including this project

This type of "high-hanging fruit" project needs carbon finance to happen since its high risks render it uninteresting to investors. Providing baseload power 24/7 helps create a fossil-free electricity system that can also include solar and wind power. When proven, this model using biomass gasifiers can also spread to other places.

## Progress

The first gasifier and combined heat and power (CHP) unit with a capacity of 49kWe has been successfully installed on Ngombeni Coconut Estate, Mafia. Under direct guidance from technology provider Spanner Re, partner organization Kisiwa Farming Limited (KFL) has successfully run test trials with different biomass feedstock compositions. Coconut shells were also successfully tested as a feedstock. Successful local stakeholder consultations have been held.

Since the offtake of the power by Tanzanian public utility company TANESCO has not yet been formalized, the plant is not yet operating. KFL continues to work towards the signature of a power purchase agreement (PPA) with TANESCO. The project has the utility's support, but agreements have not yet been formalized.

Once an agreement has been formalized, the project can start delivering electricity to the Mafia Island electricity grid and move onto phase two, where a larger facility will be built, providing more electricity displacing fossil fuels.

Supported in 2021

[www.atmosfair.de](http://www.atmosfair.de)

Photo by Malin Skydsgaard

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Before the power purchase agreements with the regional utility have been signed, there is no possibility of supporting the program again. If given the opportunity, Milkywire will assess the possibility of continued inclusion in the CTF.



# Human Rights Watch

## Phasing out coal

Reining in coal power is essential to solve the climate crisis, but unfortunately, it is still a large part of the world's energy mix. The organization Human Rights Watch (HRW) focuses on this project on the health damages coal mines, and power plants have on the local population to help deter government support for them. By pressuring decision-makers and mobilizing public support, Human Rights Watch hopes to accelerate the transition away from coal.

## Motivation for including HRW

If successful in shutting just one of the smallest coal power plants a year earlier than planned (18), the cost-effectiveness of supporting this project would be tens of times higher than conventional climate solutions. Of course, results are not guaranteed, but Human Rights Watch is a highly capable organization with many successes in its environmental work, such as advancing efforts to stop deforestation. Moreover, focusing on the adverse health effects of coal is also a promising new approach that we think has high potential.

## Progress

During the year, HRW has been moving forward with the projects in Bosnia and South Africa and advocating against fossil fuels globally.

In their international work, HRW successfully worked with other environmental and human rights organizations to encourage governments around the world to join a United Kingdom-led initiative to end international public financing for fossil fuels by 2022. Their work helped move 20 countries and institutions to make public commitments to join the initiative.

Supported in 2021 and pending support for 2022  
Photo by Taurai Maduna for Human Rights Watch  
[www.hrw.org](http://www.hrw.org)



In Bosnia, HRW has been working with Centar za ekologiju i energiju (Center for Ecology and Energy) to document the detrimental impacts of air pollution from coal-fired power plants on the health of children, older people, and other at-risk populations, including how these health hazards are compounded by Covid-19 and plan to release findings in September 2022.

In South Africa, HRW has collaborated with local partners groundWork and the Centre for Environmental Rights to make the link between coal power and the impacts of air pollution on children. The work has included urging the government to integrate children's rights into its Just Transition plan for a low-carbon future, which could result in a national policy change. In June, HRW released a report in South Africa examining the impact of unrehabilitated coal mines in the coal-rich Mpumalanga province.

HRW is now using the findings from the reports to urge national regulations to protect local populations' rights to health, as well as continuing the global advocacy to end international financing for coal and other fossil fuels.

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(18) As an example, if the project could take 1% of the credit for shutting down just one coal power plant in South Africa just one year earlier than planned, then the emissions saving from that alone would be 190 000 tons.



# Clean Air Task Force

## The Africa Energy & Climate Innovation Program

Africa is the continent with the greatest need for more energy. The energy needs to be clean, affordable, and reliable. The organization Clean Air Task Force is building on its previous highly successful decarbonization work in the US. It has created an Africa energy and climate innovation program to lay the foundation for a clean-energy future. They are focused on local needs, enabling growth, and economic development, not just on small-scale solutions like microgrids for household consumption. We believe their work has a high chance of influencing clean-energy development in Africa and our support helps them scale up their efforts and increase the likelihood of success.

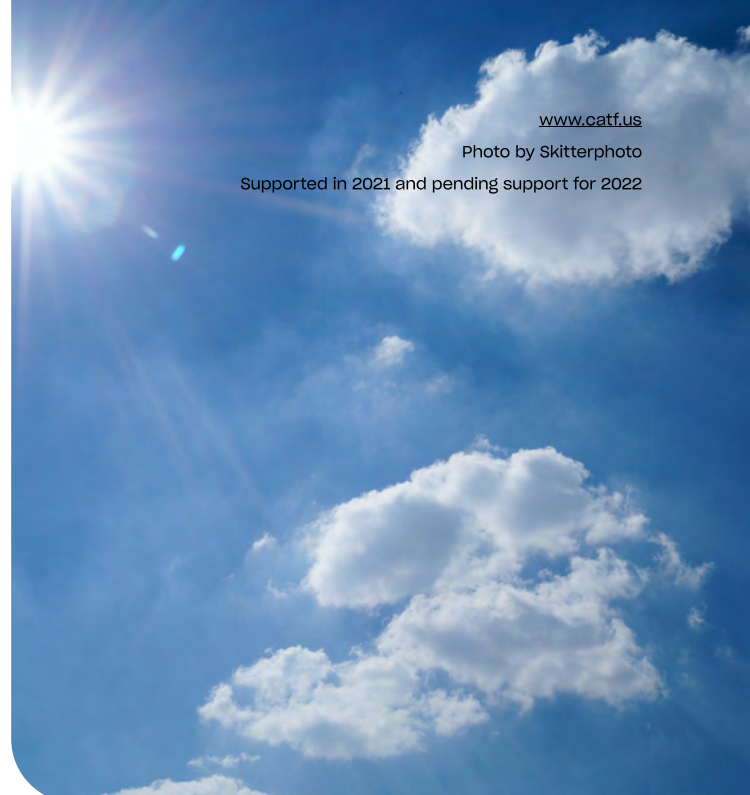
## Motivation for including CATF

Clean Air Task Force has a long history of successful policy work bringing down emissions. The Founders Pledge and Giving Green, organizations that advise donors on philanthropic giving, have put the Clean Air Task Force as their top recommendation.

They also need more funds to expand their work into new areas like this project. Lean energy access in Africa is an under-prioritized area, and due to CATF's excellent track record, there is reason to believe this work could, too, become catalytic.

## Progress

In this first year of the program, CATF has successfully laid the foundation for its work in Sub-Saharan Africa. CATF has been working on developing and testing its theory of change, establishing key on-the-ground partnerships, and conducting background research to deepen its understanding of regional power systems and economics to help identify where their engagement can make a difference.



This led to the understanding of the need to develop indigenous research and innovation within the continent to support the development and adoption of zero and low-emission technologies and support Africans to get more involved in shaping the narrative around the energy transitions on the continent.

CATF has engaged with a long list of stakeholders such as utilities, regulators, research and academia, regional bodies, and local NGOs and has established several partnerships. They are nearing the publishing of four research reports on energy transition, emissions curve, utility policies, and national work in Kenya.

CATF will continue to deepen the work with utilities in the coming year. The focus will be on supporting research and technology innovation in Africa by supporting research universities and scholars with modest research grants and joint technology efforts. They will also start actively using their research to inform advocacy, working with local partners.

The nature of the program entails that results come after several years of work. However, Milkywire recognizes that it has gotten off to a good start and sees this as a continued promising funding opportunity.



# Economic data

The Climate Transformation Fund is a selection of projects by Milkywire. Companies can support the projects selected for the fund by donating to Milkywire's charitable partners, WRLD Foundation Sweden and WRLD Foundation US (19), which then make prepurchases of carbon removal and donations to the projects selected for the fund.

Support was given in October 2021 to 11 projects, totaling \$1,06 million, with \$545 000 of this given through WRLD Sweden (20). The funds mainly came from Klarna but to some extent from Klarna customers and other donors to WRLD Sweden. Klarna has implemented an internal carbon fee on its own emissions and uses the money raised by it to support projects selected for the fund and, to a smaller extent, donors to Milkywire.

In 2022 additional projects have been selected for support. Klarna has donated \$715 000 to WRLD Sweden that will be allocated to projects selected for the fund in 2022. Klarna has also purchased carbon removal for a total of \$955 000 in 2022 for projects selected for the fund. Other companies, as well as Klarna customers, have also made donations to the fund in 2022.

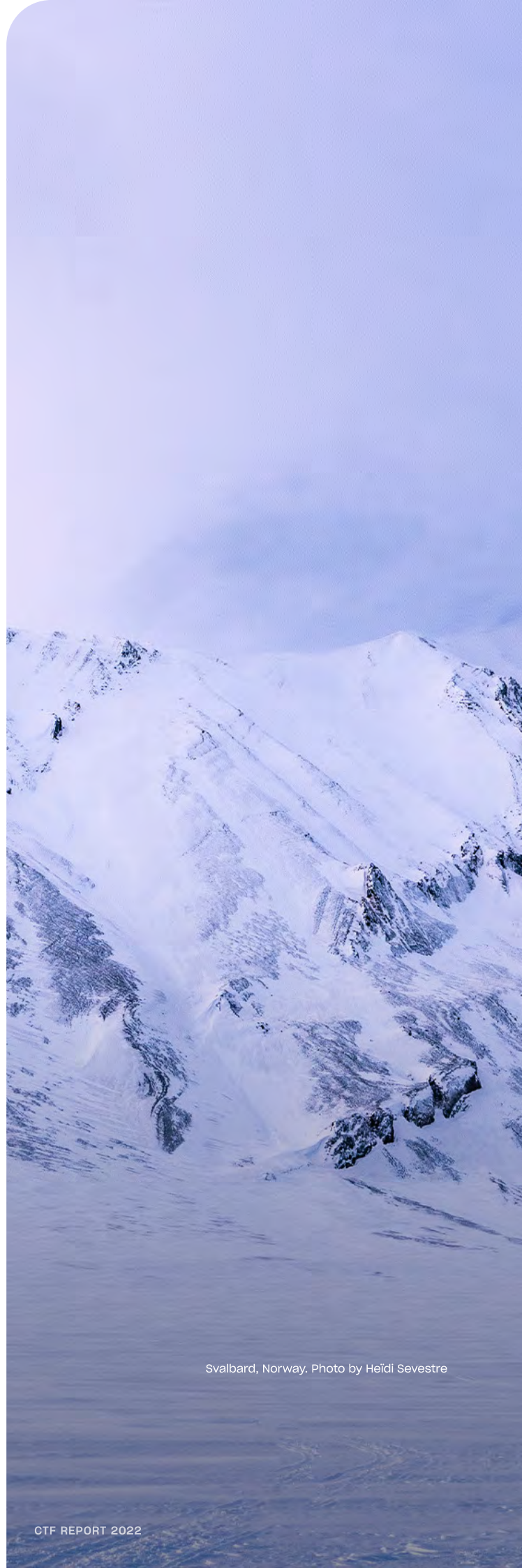
The total amounts paid out in 2022 and the details of those projects will be highlighted in next year's progress report.

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(19) The WRLD Foundation is a Swedish foundation with the organizational number 802526-9328,

And address: Sveavägen 49, 113 59 Stockholm, Sweden. The WRLD Foundation US is a Delaware-registered non-profit organization, with EIN 87-2610501 (501(c)(3)).

(20) Klarna has also made direct purchases from carbon removal providers selected for the fund. These purchases are included in the total numbers displayed in this report.



Svalbard, Norway. Photo by Heidi Sevestre



# Economic data

2021

All numbers in USD	DONOR		
	PROJECT	WRLD SWE	KLARNA
DONATION FROM KLARNA TO WRLD SWEDEN	-	\$535,000	-
OTHER DONATIONS TO WRLD SWEDEN & WRLD US FOR THE CTF	-	-	\$9500
HEIRLOOM	\$2568	\$150,000	-
CLIMEWORKS	\$2567	\$65,000	-
MASH MAKES	\$1706	\$100,000	-
HUSK	\$1467	\$100,000	-
JUSTDIGGIT	\$100,000	-	-
WARSI	\$100,000	-	-
WITHONESEED	\$1,238	\$100,000	-
ATMOSFAIR KISIWA FARMS	\$100,000	-	-
CLIMACCELERATOR	\$35,000	-	-
CLEAN AIR TASK FORCE	\$100,000	-	-
HUMAN RIGHTS WATCH	\$100,000	-	-

# The team & advisory group

Milkywire has a team of 40+ staff, many of them involved with the CTF. The people managing the Climate Transformation Fund on a daily basis are:

## Fund manager – Robert Höglund

Robert specializes in carbon removal and how the corporate sector can best contribute to climate action. He previously headed Oxfam Sweden's policy and communications team, took part in the Science-based Target Initiatives' Net-zero standard expert advisory group, and has written policy reports on net zero, carbon removal, and consumption emissions. In addition, Robert sits on the board of the research program Mistra sustainable consumption and writes regularly on carbon removal for the publication *Illuminem*.

CONTACT: [ROBERT.HOGLUND@MILKYWIRE.COM](mailto:ROBERT.HOGLUND@MILKYWIRE.COM)

## Senior environmental lead – Natalya Yakusheva Jarlebring

Natalya holds a Ph.D. in Environmental Science from Södertörn University, with her thesis focusing on nature conservation governance. She has since worked as a postdoctoral researcher on International Forest Policy at the Department of Forest Science at the University of Helsinki, where she focused on the EU debates around forest-related issues and their implications for the EU climate commitments. Natalya also has extensive experience working as a consultant in natural resource management and developing sustainability policies.

CONTACT: [NATALYA.YAKUSHEVA.JARLEBRING@MILKYWIRE.COM](mailto:NATALYA.YAKUSHEVA.JARLEBRING@MILKYWIRE.COM)

## Advisory Group

In the selection of projects, Milkywire works with an advisory group to help us choose the most impactful and sustainable climate projects for the fund. The advisory group is independent of Milkywire, and the members do not necessarily endorse all of the projects that are chosen for the CTF.

The members of the advisory group are currently:

- [Derik Broekhoff](#), senior scientist, Stockholm Environment Institute
- [Karen Holl](#), Professor of Environmental Studies University of California
- [Carsten Warnecke](#) and [Aki Kachi](#), senior experts at NewClimate Institute
- [Alexander Farsan](#), former SBTI lead at WWF
- [Jan Mazurek](#), Senior director of carbon removal at Climateworks foundation
- [Emily Thai](#), manager at Giving Green (with input from Dan Stein and others in the team)
- [Cyril Brunner](#), carbon removal researcher at ETH Zürich

Former advisory group members (2021):

- [Holly Jean Buck](#), assistant professor Dept. of Environment & Sustainability, University at Buffalo





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A polar bear track in Svalbard, Norway  
Photo by Heiði Sevestre