



Powering Agriculture Investment Alliance Partnership with Factor[e] Final Report

Name

Factor[e] Ventures

Document Title and Reporting Period

Year 3 Report

October 2021

Project Title

Fixed Amount Award No. 7200AA18FA00015 Private Sector Investment in Energy/Agriculture/Water Technologies in Emerging Markets

Submitted to

United States Agency for International Development

Submitted by

FactorE Ventures PBC

Date Submitted

31 October 2021



Project Overview

Project Background

There are more than 1 billion people worldwide without reliable access to electricity. While the various governments have the ambition to create universal access, the reality is that a national utility grid structure capable of achieving this is decades away for many nations. Set against the backdrop of lack of energy access, the vast majority of those people operating at the base of the economic pyramid are rural, smallholder farmers. These people have little access, and significantly, no means with which to procure reliable power. One of the most obvious ways to help smallholder farmers escape poverty is to provide tools for them to increase income generation. These technologies shall have the ability to generate sustainable, viable businesses, and have the demonstrated capability to impact the lives of millions of people living at the base of the pyramid in emerging economies. Factor[e] has been at the forefront of identifying these technology innovations in the energy and agriculture sectors which are capable of triggering sector-wide transformation, and then carefully guiding those ventures through the valley of death that exists between early innovation and commercial scale. By identifying the most compelling solutions and providing seed capital alongside hands-on venture building support, Factor[e] produces a pipeline of high-impact ventures with de-risked technologies that are adapted for specific market needs and are underpinned by viable business models. Factor[e] has consistently created sector-leading ventures in LMICs (especially Africa and India), that significantly outperform their peers in attracting follow-on capital and achieving scale and impact.

Through the Powering Agriculture Investment Alliance (Investment Alliance), Factor[e] Ventures and USAID partnered to mobilize a minimum of \$10m USD for the purposes of sourcing, investing in, and developing new sustainable companies in the nexus of energy and agriculture in the developing world. The program was a catalytic investment vehicle, in collaboration with the private sector, to spur investment in new energy/agriculture related technologies. This grant funding was used to provide investment capital for targeted investments in enterprises that were uncovered and/or developed in the areas related to post-harvest loss and sustainable intensification outlined above.

Project Goals

Specific objectives:

Goal #1: to catalyze investment in breakthrough, innovative technologies that have meaningful impact in developing world economies.

- Leverage public funds by bringing in private sector, family office and foundation co-investors
- Mobilize minimum of \$10 million USD in total investment in energy/ag technology companies

Goal #2: to have a demonstrable impact on those people's lives who living at the base of the economic pyramid through the use of technology in agriculture, ag tech, and ag/water nexus

- Quantify and measure results and impacts through the various reporting mechanisms (as outlined in the M&E approach)

Goal #3: to create commercially viable, financially sustainable companies that have the ability to grow into independent stand-alone entities

- Assist companies in preparation for new investment rounds through a hands-on approach of training, including a disciplined approach to corporate governance, financial reporting, board composition and reporting, and investor relations
- Broadly support agricultural and ag/tech business innovation through the use of private sector company creation

Goal #4: to deepen understanding by the public sector of the private role and process of technology investing

- Thought leadership blogs/white papers/social media that demonstrate the impact of private sector investment in the sector
- Publication and dissemination of equity investment/grants/debt catalyzed and leveraged through this alliance program

Activities and Accomplishments

The target beneficiaries of this program were agribusinesses identified as having a technology or business model innovation with the potential to reach at least 10 million people in development economic markets. These agribusinesses received investment to grow and scale their business concepts. Ultimately, this program sought to support new and sustainable approaches to accelerate the development and deployment of clean energy solutions for increasing agriculture productivity and/or value in developing countries.

Cumulative period reporting (October 1, 2018 – September 30, 2021):

- Number of companies identified and pre-screened as potential investments by Factor[e] = **79 companies**

Activity in the reporting period:

- Number of companies receiving formal equity investment approval by Factor[e] Investment Committee at the energy-ag nexus = **7**
- US Dollar amount of investment in companies at the energy-ag nexus = **\$2,200,000**
- US Dollar amount of investment in companies at the energy-ag nexus, approved by IC (InspiraFarms and Venture Build to be funded in Q4/2021 or 2022) = **\$2,700,000**
- US Dollar amount leveraged as a result of investment under this program: **\$10,750,000**

Investment Activities

Factor[e] obtained approval from the Investment Committee to make seven equity investments under this program. Equity investments have been made into Sistema.bio, Clean Crop Technologies, S4S Technologies, Crofarm Agriproducts, and Cinch Markets. Two additional equity investments have been approved into InspiraFarms and an ag/energy venture build, and are currently in documentation or launch stage.

A critical aspect of the Clean Crop Technologies, S4S Technologies, and Crofarm Agriproducts deals was how catalytic Factor[E]'s investments were in bringing other equity investors into the deals. The total equity round for Clean Crop Technologies was \$2.5M, including our \$600k investment, and included Prime Impact Equity Fund (1.6M), The Alchemy Fund (100k) and The Syndicate Fund (\$200k). The total equity round for S4S Technologies was \$1.75M, including our \$500k investment, and included Acumen Fund India (\$1M) and CSAW (\$250k). The total equity round for Crofarm Agriproducts was \$2.2M, including our \$600k investment, and included Pravega (150k) and IPV (1.45M). The bridge round into Crofarm also catalyzed a series A investment round of \$6M from ON

Mauritius and SIG. Total co- and follow-on investment catalyzed as of the end of the 2021 fiscal year was \$10.75M. All data is summarized in the table below.

Portfolio Company	F[e] Investment	Leverage	Co/Follow-On Investors
Sistema.bio	\$300,000		
S4S Technologies	\$500,000	\$1,250,000	Acumen Fund, CSAW
Clean Crop Tech	\$600,000	\$1,900,000	Prime Impact, Alchemy, The Syndicate
Crofarm Agri	\$600,000	\$7,600,000	Pravega, IPV, ON Mauritius, SIG
Cinch Markets	\$200,000		
InspiraFarms	\$300,000		
Venture Build	\$200,000		
TOTAL	\$2,700,000	\$10,750,000	

A brief description of the companies, recent highlights and future plans:

Sistema.bio (www.sistema.bio)

Investment Amount: \$300,000 USD

Countries of Operation: Mexico, Kenya, India, Colombia

Sistema has developed an anaerobic digestion technology that creates clean cooking fuel for households using animal waste. The animal waste is fed into the Sistema digester which converts the waste into biogas without manual intervention. Sistema has developed special cooking appliances that use biogas directly as the only source of fuel, completely replacing charcoal, firewood, or other biomass materials.

One of Sistema’s key innovations is the modular yet robust material of the digester itself. The digester does not require permanent construction and comes assembled from the warehouse. The simple installation process, and maintenance-free operation, makes the Sistema solution a valuable intervention for smallholder-farmer customers with livestock.

Factor[e]’s investment focused on developing and using additional appliances for specific use with Sistema’s biogas output. The ability to use Sistema’s digester units with a broader range of appliances will expand the application potential of the technology and make the technology more accessible to a wider group of rural customers.

2021 Highlights, Lowlights, and Overall Status Update

- Kenya’s commercial reorganization starting to yield results in June: \$179K vs \$110K in average for the first five months and credit organization was reinforced with good collections results

- Reforecast exercise shows a mainly unchanged topline goal but an increase in COGS that we need to mitigate to remain close to the initially projected EBITDA
- As expected Q2 results have been severely hit by COVID in India; India's sales went from \$904K in Q1 to \$342 in Q2 (47 percent below budget) with inventory remaining on our books worth \$ 1.5M. Situation is gradually improving with projects starting to ramp up again
- Significant progress has been made on the Series B with prospective investors, led by KawiSafi and others; as company is now receiving commercial, later stage investment, their investors are requiring that they re-domicile their topco to the US (Delaware C-Corp). The steps have been approved by all parties and the process is currently underway.

Clean Crop Technologies (<https://cleancroptech.com/>)

Investment Amount: \$600,000 USD

Country of Operation: United States

Clean Crop Technologies (Clean Crop) is a Massachusetts based company formed in 2017 to develop High Voltage Atmospheric Cold Plasma Technology (HVACP) as a food safety and loss reduction solution. Clean Crop is building a technology platform that can be applied across different agri-commodities like grains, fresh produce, foods, meat, grains and more. The company is focused on treating post-harvest grain products starting with groundnuts. The FAO estimates that 1 billion tons of grains products are lost annually around the world due to mycotoxin contamination and losses in the value chain from spoilage.

Cold plasma is a highly energized gas stream that is formed by exposing the combination of inert Nitrogen and Oxygen gas to a high voltage. This high voltage strips electrons from the gas molecules and forms Reactive Gas Species (RGS) that have antimicrobial properties that can be used to reduce the natural micro flora on food products. The natural micro flora can consist of bacteria, yeast, molds, and fungi, some of which are pathogenic to humans and animals and can lead to food-borne illnesses. Once the plasma is de-energized, RGS return to their native state leaving no residues on the treated product.

Clean Crop has used the above technology and demonstrated reduction in microbial load like Aspergillus fungi in groundnut by greater than 99%, thus improving food quality and safety, increasing shelf life, and reducing spoilage. The benchtop proof of concept developed by Clean Crop has also reduced aflatoxins in contaminated groundnut stocks by at least 50%. Clean Crop achieves this major milestone at a lower cost than competing technologies. Clean Crop is targeting a \$50/MT service price that can help processors avoid \$150-\$550/MT in losses. Global snack brands LBNuts and Mars have tracked its early progress with great interest; LBNuts has signed an LOI pending field pilot results this year.

2021 Highlights, Lowlights, and Overall Status Update

- Began ruggedizing electrodes to reach 1,000 hours of lifespan
- Technical validation on meat shelf-life extension and seed germination use cases

- Successfully began customer field trials for seed germination enhancement in 4 states with two customers
- Finished design for 200kg/hour prototype for nuts
- High staff churn from post-lockdown lifestyle changes and poaching from deeper-pocketed engineering firms like Intel
- Design phase took longer, and supply chain issues led to 6-month delay in build starting on 200kg prototype
- Series A raise taking longer than anticipated but Clean Crop now has a signed term sheet

S4S Technologies (<https://s4stechnologies.com/>)

Investment Amount: \$500,000 USD

Country of Operation: India

S4S Technologies is a food start up supplying nutrition-rich convenience foods to industrial kitchens and food companies. S4S's preservative-free, shelf-stable, lightweight, ready-to-use dried vegetables replace fresh supplies in these industrial applications. In the process, S4S saves customers time in procurement and labor in their kitchens while always delivering its products at a price lower than the market price for fresh supplies.

Sourcing their dehydrated foods from nearby farm communities by providing farmers with low-cost energy hardware, S4S delivers strong livelihood impact (increased income for near farm communities, empowerment of women, nutritional security) and meaningful resource impact (energy efficient dehydration and reduced post-harvest losses).

S4S taps into the growing unmet demand for such products in the Indian market. The cost-effectiveness, adaptability of their drying solution, knack for developing new products, and the technical abilities of S4S's team set them apart from competitors. Internally developed drying technologies (further improved with direct support from Factor[e] over the past year) allow them to produce a unique range of dehydrated foods while reducing energy usage and production cost over current commercial drying methods. S4S's technologies and sourcing strategies also help to reduce post-harvest losses and improve livelihoods by keeping value-addition closer to the farm and facilitating access to larger, higher value markets.

2021 Highlights, Lowlights, and Overall Updates

- Commitment of \$900,000 in Grant Funding by Shell Foundation. Agreement to be signed.
- Maharashtra Gramin Bank and Samunnati NBFC onboarded as Asset Financing Partner
- Finalist at Zayed Sustainability Awards 2021
- Developed successful (impact and commercial) Village Level Sourcing model to source produce directly from farmers with women aggregators at the village level
- Delay in implementation of New Inventory System customized to S4S business needs
- Impacts of Covid on S4S's work, especially the challenges that commercial kitchens (hotels, restaurants, catering — a core customer segment for S4S) faced during lock down periods.
- 40,000 tons annual processing capacity by 800 women farmers-turned-entrepreneurs

- 12,000-strong farmer sourcing network
- Serving over 1,100 institutional customers
- Saving 243.76 tons CO2 per year

Focus for 2022 and Beyond

- Closing Series A financing
- Closing working capital facility
- Recruiting a strategic finance lead
- Doubling monthly revenues and volumes processed
- Achieving EBITDA positive status on a monthly basis

Crofarm Agriproducts (<https://crofarm.com/>)

Investment Amount: \$600,000 USD

Country of Operation: India

Crofarm is a digital agri-value chain platform connecting farmers directly to consumers, reducing post-harvest loss, improving value to customers, and securing quality markets for farmers. Varun Khurana, an experienced agritech entrepreneur in India, leads Crofarm, which has recently pivoted its business model from the competitive B2B-fruit-and-vegetable-retailer landscape to a B2B2C social e-commerce model. Its new model, under the brand name “Otipy” (the phonetic for the Onions, Tomatoes, Potatoes acronym), recruits and serves customers through final mile fulfilment partners (resellers). These resellers fall into two categories: 1) professional class women building small businesses on Otipy’s platform by distributing produce to their neighbors and 2) non-perishables retailers who can increase their revenue and customer base by adding perishables. To make its rapidly expanding B2B2C social e-commerce model work with perishables, Crofarm is investing in cold storage solutions in its distribution centers and basic temperature control solutions in transit (cooler boxes and gel packs), which we consider a primary factor in classifying this investee under a cold storage category within the ag-energy nexus.

2021 Highlights and Overall Status Update

- Crossed milestone of 7500 average daily order during September 2021
- Closed Series A investment of \$6M USD in 2021

Focus for 2022 and Beyond

- In the process of closing series B investment for \$25M+ USD which will enable path to scale and potential market expansion

Cinch Markets (<https://www.crunchbase.com/organization/cinch-markets>)

Investment Amount: \$200,000 USD

Country of Operation: Kenya

Cinch upgrades sub-optimal land by making investments in intensifying production sustainably. These investments are not feasible when land is fragmented. By leasing land, employing farmers in

their commercial farm operation, and sharing revenues with smallholder lessors, Cinch improves ag-related incomes for its lessors by 300% to 600%. In the process, it helps smallholders make best use of their most valuable asset (their land) and establish a financial identity through their records of transactions with their lessors and employees.

2021 Highlights and Overall Status Update

- Cinch closed a \$381,000 grant from USAID's Development Innovation Ventures (DIV) program; no other ongoing fundraising except typical pipeline of grant applications.
- Cinch reached monthly positive cash flow (i.e. revenue > operating expenses, including operating costs, team salaries, etc.) in September 2021; they expect to be cash-flow positive moving forward as well.

Focus for 2022 and Beyond

- Team expansion; Cinch is still looking for a product lead, though that is less of a priority than connecting with more reliable, international buyers of their products. Cinch is particularly excited about Chia (which we are now launching on pilot farms across Kenya that are rain-fed) as a growth opportunity for Cinch, so finding an international buyer for that (in addition to their 2 existing local buyers) will be important.

InspiraFarms (<https://www.inspirafarms.com/>)

Investment Amount: \$300,000 USD

Country of Operation: Kenya, Italy

Inspira Farms was founded in 2012 to address the challenges of post-harvest loss and limited market access for small and growing agribusinesses and their supplying farmers. InspiraFarms set out to address these key challenges by providing certification-ready small-scale refrigerated storage and food processing facilities, accompanied by asset financing and technical services to tackle the market failures that leave many such agribusinesses without adequate post-harvest infrastructure.

Inspira Farms products are designed to make small and growing agribusinesses and smallholder-based value chains more competitive and sustainable. InspiraFarms have established market presence in three sub-regions in Sub-Saharan Africa, with Kenya being the anchor for East Africa, Zimbabwe for Southern Africa and Ghana for West Africa.

Current Update, Focus for 2022 and Beyond

- Inspira brought in new CEO, CFO and Director of Sales in 2021
- Pipeline has grown 3x in 2021 under new senior leadership
- Prospective deal size has grown 3.3x in 2021 over 2020
- Utilize bridge round to build a track record, generate a more attractive valuation, and raise enough capital in their series C to drive towards key inflection points.
- Building a culture that crosses geography, ways of working and removing single points of failure for a more robust organization. This includes increasingly robust pricing methodologies, asking for better commercial terms, with better quality contracting process

Ag/Energy Venture Build

Investment Amount: \$200,000 USD

Country of Build: Kenya

Our Investment Committee has approved a \$200k investment for the Factor[e] Venture Studio to take one of the following three ag/energy concepts forward to successful launch and spinout. The Venture Studio will build high-impact ventures in energy, agriculture, and mobility that are addressing some of Sub-Saharan Africa's greatest income inequality and climate challenges. It will do this by sourcing venture ideas from sources such as customers on the ground in Africa to Factor[e]'s extensive network of global partners, using rigorous, high velocity processes and teams on the ground in Africa to test, iterate and invest in new venture ideas in the studio, building diverse, experienced leadership teams on the ground in Africa to spin out the most promising ventures, and supporting startups from idea to exit, providing targeted support at critical times to drive scale, exits and returns for investors.

Concept Summaries:

1. Kisasa Foods (Venture Studio business idea)

- The high-level idea is to reduce the energy consumption, cost, health impact and environmental impact of cooking with charcoal and firewood with a new clean food technology (“foodtech”) company in Africa. Rather than focusing on cooking fuel or cooking products like all other players in the industry, we want to leverage decentralized agro-processing to enable a line of locally produced, dehydrated and fortified foods that dramatically reduce cooking time and fuel needs by over 75% while offering critical vitamins and minerals.
- In western markets, the equivalent (i.e. minute rice) is 25-40% more expensive than regular rice, and is sold as a convenience (vs energy savings). We will bring Kisasa foods to the market at competitive prices due to additional revenue from carbon financing. “Kisasa” means “modern” or “now” in Swahili and our goal is to build a high impact, profitable business that will deliver healthy, clean, fast-cooking foods to millions of households in Africa at affordable prices.

2. Flying star Tractor (aka Wash & Wills Agro Machinery Business, Uganda)

- An entrepreneur named Joseph Ariong in Uganda has a compelling tractor venture concept to increase acreage under production and yield per acre in Uganda. Joseph has a license to bring the Flying Star walking tractor from Thailand to Uganda and has been testing this product in the market for about 24 months (COVID lockdowns slowed down progress). The FlyingStar can do many things from open land, to plant, weed, harvest and transport goods to market with its unique design for the small holder farmer market in Thailand. The Government of Uganda is particularly interested in supporting distribution of the tractor and has signed several contracts to procure a total of \$1m of FlyingStar tractors from Joseph's company. The Government of Uganda also wants Joseph to assemble the tractors in the country so has given him land for a factory in their industrial park. Looking ahead, Joseph is raising equity and working capital to build the assembly factory, set up a sales and training team and create an electric version of the tractor (he has already built a prototype at the Uganda Innovation Hub).

- Joseph is a very hardworking and committed Ugandan entrepreneur, but he needs support with business planning, technology, capital raising and scaling into new markets, hence using the venture studio as an accelerated path to scale is ideal.

3. Microinverters for Solar Irrigation (Technology Brokering Idea)

- AC microinverters have rapidly increased in both functionality and affordability. Unlike traditional inverters, AC microinverters can allow even a single 300W solar panel to supply variable frequency AC power to low-cost AC motors (as well as any other AC appliance).
- The venture studio will landscape the technology market, identify user requirements, and aim to broker the AC microinverter technology into a SSA solar irrigation company (such as SunCulture). In the process the studio will:
 - Identify costed BOMs of existing DC solar irrigation products on the market
 - Estimate functional specifications/requirements for common DC pump systems
 - Locate sourcing options for micro-inverters and AC pumps
 - Estimate cost of integrating AC micro-inverters and pump into a complete system
 - Create a simple architecture diagram for an AC system

Stakeholder and Community Engagement Updates

Traditionally attended events have been put on hold as a result of COVID in 2020 and 2021, but Factor[e] continues to find ways to share key impacts and take-aways from the work we do with the public. Below is a list of FY21 published pieces and important news.

- [Factor\[e\] Ventures selected for ImpactAssets’ Tenth “IA 50 Impact Fund” Listing](#)
- [Catalytic Investing in Emerging Markets](#)
- [Minigrids and Cold Storage Are a Match Made in Sustainable Development Heaven – So What’s Keeping Them Apart?](#)
- [The Opportunity at the Nexus of Energy and Agriculture](#)
- [Factor\[e\] Ventures Adds Two Accomplished Trailblazers to Board of Directors](#)
- [Factor\[e\] Ventures welcomes Lyndsay Holley Handler and Terry Karungi Obel to build new Venture Studio](#)

III. Milestone Status since Last Workplan Submission

Table 1: Milestone Status

No.	Milestone Description	Due Date per Award Agreement	Progress	Additional Comments
Year 1				
1	Year 1 workplan	1	Complete	
2	Completion of M&E plan	1	Complete	

3	"Dry" close for first 200K tranche of seed investment + plus external match (total of 400K +- 100K invested)	4	Complete	
5	Gender integration plan developed	8	Complete	
7	year 1 progress report	Oct 31, 2019	Complete	
8	M&E data collected	Oct 31, 2019	Complete	
Year 2				
M.1	Year 2 workplan	13	Complete	
M.2	"Dry" close for 600K tranche of seed investment + plus external match (total investment to date of 1.6M +- 200K invested)	May 31, 2020	Complete	
M.3	Thought leadership and dissemination of equity investment / grants /debt catalyzed	12	Complete	
M.4	year 2 progress report	10/30/2020	Complete	
M.5	M&E data collected	10/30/2020	Complete	
M.6	Gender integration report	20	Complete	
M.7	Minimum 2 million of follow-on investment Factor[e] energy-ag ventures mobilized	24	Complete	
M.8	Thought leadership and dissemination of equity investment / grants /debt catalyzed	24	Complete	
Year 3				
M.9	"Dry" close for 300K tranche of seed investment + plus external match (total investment to date of 2.2M +- 200K invested)	Oct 31, 2020	Complete	Late as a result of difficulty in finding matching co-funding dollars with equitable investment criteria
M.10	"Dry" close for 300K tranche of seed investment + plus external match in energyag ventures (total investment	March 31, 2021	Submitted	Late as a result of difficulty in finding matching co-funding dollars with equitable investment criteria (achieved in the

	to date of 2.8M +- 200K invested)			end as a result of removing co-funding requirement)
M.11	Year 3 workplan	25	Complete	
M.12	"Dry" close for 200K tranche of seed investment + plus external match in energyag ventures (total investment to date of minimum 3.2M invested)	August 31, 2021	Submitted	Late as a result of difficulty in finding matching co-funding dollars with equitable investment criteria (achieved in the end as a result of removing co-funding requirement)
M.13	M&E data collected	10/30/21	Submitted	Late due to timing of final investments made
M.14	Minimum 3 million of follow-on investment mobilized (5 million total to date)	36	Submitted	Exceeded target with total leverage achieved to date of 10.75M
M.15	final report	36	Submitted	Late due to timing of final investments made

IV. Challenges and Lessons Learned

2021 has been a very active year in the agtech sector for both India and Africa, but once again COVID has influenced the market significantly. Similar to 2020, this year has been dominated by investors focusing on their existing portfolios. According to Agfunder, startups in the sector raised \$26.1 billion in 2020, a 15.5% year-over-year increase, which represents a 34.5% growth over 2019. However, much of the increase is attributed to significant growth in late-stage deals, where investors doubled down on existing portfolio. For Factor[e], this global trend has played out in a very similar way inside our own portfolio, with significant investment being deployed into known portfolio deals vs. “new” ventures.

The other significant challenge during this second year of COVID is personnel change. Again, echoing global trends, Factor[e] saw significant turnover caused by a variety of factors. While this caused disruption and delays in deploying capital, it also allowed us to make key replacement hires with deep local experience in Ag and move a greater concentration of our team and leadership into Africa.

COVID highlights importance of farm to retail - Crofarm

The global pandemic served to highlight the importance of effective supply chains and digitally-enhanced ways of transporting and selling food to consumers. Midstream innovation – between farmers and retailers – was a very active investment area globally, especially in India where food delivery, especially eGrocery, saw massive consumer uptick and investor interest. Crofarm (portfolio company connecting farmers to retailers) has seen their revenue approach the \$10M mark (on an annualized basis) with 8,500 daily average orders. This has sparked investor interest allowing Crofarm to secure a \$31M investment with a 4x jump in valuation from their prior funding round.

Growing Indian VC market embraces Agtech

Related to Crofarm, the rapidly growing Indian VC market has fully embraced agtech. According to KPMG venture capital investments in India more than doubled from their previous quarterly high of \$6.7 billion in Q2 of 2021 to \$14.4 billion in Q3. While Africa has seen record growth in the VC market, it will likely top out at roughly \$2-2.5 billion invested in 2021, still just 4% of what the Indian market is. India is now the third largest global market for Agtechfood VC deals at 164 deals inked in 2020 at a value of \$1.8B, surpassing the UK and France combined. Of note, Indian eGrocer BigBasket completed two funding rounds in 2020 totaling over \$100M in new equity. This level of investor interest has significantly inflated Agtech valuations in India, making access to quality deals increasingly competitive. It is not yet clear if this will be a temporary bubble, or if this is the new normal for Agtech VC in India. This trend is also putting Africa into a spotlight for Factor[e], recognizing that our impact mandate challenges us to focus on markets with less access to private capital (more on that next).

High impact, high growth deals are still hard to find and fund

Climate and development challenges relating to agriculture continue to demand more attention from the development community; a new study from the UN Food and Agriculture Organization (FAO) indicates that the supply chain is the fastest-growing source of greenhouse gas (GHG) emissions from global food systems, outpacing agricultural activity and land use changes. A billion small-holder farmers are already feeling the impacts of climate change - impacting crop cycles, yields, and exposure to severe and extreme weather events.

While Agtech holds immense promise for addressing these issues, the focus of most Agtech investment in India and Africa has been much closer to the consumer end of the value chain than the producer end. VC investment has been dominated by eGrocery, Agribusiness Marketplaces, and Fintech for Ag – while in the US (the largest Agtech market by far), there has been much more investment in hard tech – farm robotics, mechanization, farm management software, sensing, IoT, and biotech. It is not yet clear what subset of these technologies will be transferrable to the small-owner plots of India and Africa – however these technologies are more central to the economic and climate challenges of farmers. While there is a great deal of excitement globally about the Agtech sector, when those companies that are less central to the farmer are removed, we see that 1) this sector still is nascent, 2) high quality, high impact deals are difficult to find, 3) those deals may not be “VC scalable” and struggle to find investment.

This reality is pushing Factor[e] in two directions. First, we are reviewing the lens by which we predict the impact of our investments, adding “climate adaptation and resilience” as an element of consideration. This slight shift in focus will help us differentiate the larger activity in the Agtech sector with those ventures which directly support small farmers. While the literature and research on impact frameworks for climate adaptation and resilience are nascent, we know that there is direct empirical evidence (Massetti and Mendelsohn) which supports investing in many ag technologies including access to markets, ability to shift crops, access to irrigation, climate insurance, and climate resilient seeds. The more we can focus on these areas of Agtech, the more we can ensure the impact of our investments. The second direction of change for Factor[e] is a greater focus on Africa (over India) justified by the impressive growth of the private investment market in India and increasing acceptance of Agtech investing in that market. While India is by no means a “solved”

market, it's clear that from an impact standpoint, Africa represents a higher priority for Factor[e]. Over the next few years, we will watch this trend and see if our India activities shift from active investment to technology and innovation sourcing.

V. Support for Gender Equality and Gender Inclusion

While Factor[e] is focused on reaching bottom-of-the-pyramid consumers, including the poorest and most vulnerable, Factor[e] is eager to further systematize considerations of gender and marginalized populations into its processes and investment decision-making.

For this portion of the contract, activities include:

1. Develop and apply methods for implementing a gender-smart investment strategy.
 - Process includes deploying a baseline gender assessment that all companies that enter due diligence phase 1 of our pipeline will complete; survey centered around data on strategy and execution, workplace equity, and HR – people, policies, and reporting.
 - Target companies that receive approval for investment from our investment committee are then required to sign an ESG/Diversity and Inclusion side letter with Factor[e] as part of the legal deal documentation that includes certain additional representations, warranties, affirmative and negative covenants, undertakings and measurement, inspection and reporting obligations related to diversity and inclusion, as well as develop in coordination with Factor[e] a Diversity and Inclusion Action Plan.
 - On an annual basis all companies in our portfolio will report against diversity and inclusion targets that have been identified and agreed upon in the Diversity and Inclusion Action Plan.
 - All Powering Ag investees completed a baseline gender equity survey, included as annex C; on-going annual surveys will be collected in Q1 of each year which covers the preceding calendar year for purposes of documenting progress (beginning in Q1 2022)
2. Gender equity strategies deployed with portfolio companies as described above have also been implemented within Factor[e].
 - Baseline gender assessment completed in Q3 2020. On-going annual surveys will be completed in Q1 of each year which covers the preceding calendar year for purposes of documenting progress (beginning in Q1 2022)
 - Target gender equity metrics developed around the following measurements: board representation, employee representation, employee ownership, management team representation, pay gap calculations and inclusion in compensation review processes, recruitment processes, and implementation of HR processes. Reporting against targets to be completed on an annual basis and reported to our Board of Directors.

VI. Role of PAEGC Funding and associated support

As a result of PAEGC funding and associated support, we have been able to accomplish the following:

- Grow our ag/energy related assets under management by 2.7M USD
- We are now seeing our ag investments perform better than energy investments on a gross IRR basis

- We believe improved performance will allow us to attract additional support from more commercial investors into the ag and ag/energy sectors
- To date our PAEGC portfolio has raised 12.1M in co- and follow-on investment and are on track to raise an additional 35.5M in the next three months (between Crofarm, Clean Crop and Sistema.bio)
- We believe that ag and ag/energy will be an important sector for climate finance and hope this will also help attract more investors into these sectors

Additionally, support from PAEGC helped de-risk our continued investment in the early stages of the ag/energy nexus and provided matching leverage for co-investment into ag/energy deals with Shell Foundation.

VII. Future Plans

After closing out our PAEGC award, we will continue to do the following:

- Support our ag/energy investments to maximize both value and social and environmental impact of their CES
- As an organization we plan to raise formally fundraise for additional capital for ag and ag/energy investments in late 2022

Support from PAEGC has helped us diversify our portfolio in ag/energy which has resulted in improved fund performance and ideally will translate to additional investor support in the future.

Annex A: Performance Indicators Table

	Required Indicators (either actual or potential contribution to be monitored)	Year 3 Reporting
IR 1: Increase in farmers and agribusinesses' access to and/or use of clean energy solutions	1.1 Type and number of clean energy solutions developed	CES Developed Sistema.bio: 0 CroFarms: S4S: 0
		Units Deployed Sistema.bio: 123 units CroFarms: S4S: 530
	1.2 Number/Type of beneficiaries (farms/agribusinesses/customers) with improved energy services due to PAEGC assistance	Beneficiaries Sistema: 1,050 Crofarm: 97,725 (86,680 customers/11,045 retailers) S4S: 15,560
		Female Beneficiaries Sistema.bio: 504 CroFarm: N/A S4S: 15,560
	1.3 Type and Number of wholesalers/retailers/maintenance professionals accessible to beneficiaries for selling/servicing clean energy solutions	Professionals Sistema: -36 technical and commercial staff Crofarm: 11,045 retailers S4S: 5 technicians
		Female Professionals Sistema: 9 female professionals CroFarms: 4,499 S4S: 0 female professionals
	1.4 Clean energy generation capacity installed or rehabilitated as a result of PAEGC assistance	Sistema: 1,081 kW S4S: 1,696 kW
	1.5 Number of persons attending trainings/demonstrations on CES technology	Persons trained/demo'ed S4S: 1,800
Females trained S4S: 800		
Females demo'ed S4S: 1,000		
IR 2: Increase in agricultural productivity and/or value among farmers and agribusinesses	Required Indicators (either actual or potential contribution to be monitored)	Year 3 Reporting
	2.1 Change in agriculture production per standard unit attributed to use of PAEGC Innovators' clean energy solution	
	2.2 Change in income attributed to use of PAEGC Innovators' clean energy solution	

	2.3 Expected life of project savings from energy efficiency or energy conservation, as a result of PAEGC assistance	
IR 3: Increase in support for low carbon economic growth within the agriculture sector	Required Indicators (either actual or potential contribution to be monitored)	Year 3 Reporting
	3.1 US Dollar amount of investment mobilized, from public or private sources, for climate change 3.2 Greenhouse Gas (GHG) emissions, estimated in metric tons of CO ₂ e, reduced, sequestered, and/or avoided (annual)	3.1 Nothing above what is recorded in IR 4.1 and 5.3 3.2 Sistema.bio: 286 metric tons Crofarm Agriproducts: 382 metric tons S4S: 243.8 tons
	3.3 Sustainable Livelihoods Improved 3.4 Jobs Created	3.3 Sistema.bio: 2,816 Clean Crop: 0 S4S: 14,060 Crofarm: 9,094 Cinch: 362 3.4 Sistema.bio: 6 Clean Crop: -2 S4S: 1 Crofarm: 154 Cinch: 0
IR 4: Catalyze investment in breakthrough, innovative technologies that have meaningful impact in developing world economies	Custom Indicators (either actual or potential contribution to be monitored)	Year 3 Reporting
	4.1 Total USD co investment and follow-on investment into energy/ag technology companies that have been invested in through the Factor[e]/PAEGC partnership	S4S Technologies: 1.25M USD Crofarm Agriproducts: 7.6M USD InspiraFarms: 1.34M USD (1.2 EUR & 1.1203)
IR 5: To create commercially viable, financially sustainable companies that have the ability to grow into independent stand-alone entities	Custom Indicators (either actual or potential contribution to be monitored)	Year 3 Reporting
	5.1 Number of companies identified and pre-screened as potential investments by Factor[e] 5.2 Number of companies receiving formal equity investment by Factor[e] at the energy-ag nexus 5.3 US Dollar amount of Factor[e] investment in companies at the energy-ag nexus 5.4 Total hours spent by the Factor[e] team supporting portfolio companies post investment. Disaggregated qualitative details of major initiatives will also be provided. 5.5 Indicators of Economic Stability by companies invested in at the energy-ag nexus	5.1 27 companies identified and pre-screened as potential investments by Factor[e] 5.2 Five – S4S Technologies, Crofarm Agriproducts, Cinch Markets, InspiraFarms, ag/energy venture build 5.3 1,800,000 USD 5.4 2,638 hours 5.5 a. Revenues Sistema.bio: 6M USD Clean Crop Technologies: 0 S4S Technologies: 1.6M USD Crofarm Agriproducts: 3.4M USD Cinch Markets: 131k USD b. Units sold

	a. Revenues produced b. Units sold c. Sales pipeline d. Pilots completed e. Markets entered f. Margins achieved g. Additional money leveraged/co-investment created	S4S: 209 Crofarm: 405,523 Clean Crop: 0 Cinch: 0 c. N/A d. N/A e. N/A f. Margins Sistema.bio: 66% Cinch: -63% Clean Crop: n/a Crofarm: 26% S4S: 17% g. Money leveraged Crofarm Agriproducts: 7.6M USD																	
IR 6: To deepen understanding by the public sector of the private role and process of technology investing	Custom Indicators (either actual or potential contribution to be monitored)	Year 3 Reporting																	
	6.1 Number of instances of outreach by Factor[e], disaggregated by medium	6.1 <table border="1"> <thead> <tr> <th><u>Outreach Type</u></th> <th><u>Count</u></th> </tr> </thead> <tbody> <tr> <td>Article</td> <td>3</td> </tr> <tr> <td>Panel Discussion</td> <td>0</td> </tr> <tr> <td>Press Release</td> <td>3</td> </tr> <tr> <td>Presentation</td> <td>0</td> </tr> <tr> <td>Podcast</td> <td>0</td> </tr> <tr> <td>Webinar</td> <td>2</td> </tr> <tr> <td>Interview</td> <td>0</td> </tr> <tr> <td>Total</td> <td>8</td> </tr> </tbody> </table>	<u>Outreach Type</u>	<u>Count</u>	Article	3	Panel Discussion	0	Press Release	3	Presentation	0	Podcast	0	Webinar	2	Interview	0	Total
<u>Outreach Type</u>	<u>Count</u>																		
Article	3																		
Panel Discussion	0																		
Press Release	3																		
Presentation	0																		
Podcast	0																		
Webinar	2																		
Interview	0																		
Total	8																		

Annex B: Environmental Monitoring and Mitigation Plan (EMMP)

1. Background Summary

Innovator name	FactorE Ventures PBC
Project name	Internal FactorE environmental policy compliance
Project description summary	Maintain compliance with FactorE environmental policies
Description of geographic location of implementation, including country and region	Global
Major local stakeholders/ beneficiaries who will be impacted	Internal FactorE operations/all portfolio investee companies
Other relevant information (e.g., EIAs already done)	Maintain compliance with FactorE Environmental, Health an Safety Policy (as outlined in the Employee Handbook)

2. Country Environmental Regulatory Framework

Investees to warrant compliance with all host country environmental compliance procedures and requirements.

3. Potential Environmental Impacts and Mitigation Measures

Describe the negative environmental and social impacts identified during the EMMP development and their related mitigation measures.

EMMP Summary Table

1. Activity	2. Potential Environmental Impacts	3. Mitigation Measure(s)	4. Monitoring Indicator(s)	5. Monitoring & Reporting Schedule	6. Monitoring Method	7. Responsible Parties
Investing in biogas companies	Over application of biofertilizer which can damage crops, release of methane gas through release filter (due to under consumption of gas), over consumption of water in stressed areas, fires due to biogas igniting	FactorE will review portfolio companies for compliance with our EMMP policy	Environmental audits are conducted annually to re-assess environmental risks, evaluate the likelihood and impact of each risk, and the mitigation techniques	Annually through environmental audits and quarterly communications at Board meetings	Communications from portfolio company management team to FactorE Board representative including a review of annual environmental audit and any other risks; quarterly confirmation of compliance with EMMP policies	FactorE and portfolio company
Investing in cold plasma research and development companies	Ionized gases generated by the system are ventilated to open air.	FactorE will review portfolio companies for compliance with our EMMP policy	Environmental reviews are done monthly by the R&D team and the management team reviews overall environmental risks, evaluate the likelihood and impact of each risk, and the mitigation techniques annually	Monthly through environmental reviews and quarterly communications at Board meetings	Communications from portfolio company management and R&D teams to FactorE Board representative including a review of any documented risks and resolutions; quarterly confirmation of compliance with EMMP policies	FactorE and portfolio company
Transportation of Raw Material to MEs	CO2 emissions	-Optimizing shipping routes -F[e] to confirm compliance with our EMMP policy	CO2 emitted/kg (Quantity transported)	Quarterly BOD meetings and annually to investor (30 th September)	Communications from portfolio company management and R&D teams to FactorE Board representative including a review of any documented risks and resolutions; quarterly confirmation of	FactorE and portfolio company

					compliance with EMMP policies	
Transportation of Semi-Finished Goods to Factory	CO2 emissions	- Optimizing frequency of Transportation - Route Optimization - F[e] to confirm compliance with our EMMP policy	CO2 emitted/kg (Quantity transported)	Quarterly BOD meetings and annually to investor (30 th September)	Communications from portfolio company management and R&D teams to FactorE Board representative including a review of any documented risks and resolutions; quarterly confirmation of compliance with EMMP policies	FactorE and portfolio company
Water Consumption in Factory and Pilot Plant	Increasing Water Scarcity	-Reduce water consumption per kg - F[e] to confirm compliance with our EMMP policy	Water Consumed (Water Bill) / Quantity Processed per Month (kg)	Quarterly BOD meetings and annually to investor (30 th September)	Communications from portfolio company management and R&D teams to FactorE Board representative including a review of any documented risks and resolutions; quarterly confirmation of compliance with EMMP policies	FactorE and portfolio company
Electricity Consumption in factory & Pilot Plant	Emissions of greenhouse gases and other air pollutants	-Pre-processing at Farm gate instead of Factory - F[e] to confirm compliance with our EMMP policy	Electricity Consumed (Electricity Bill) / Quantity Processed per Month (kg)	Quarterly BOD meetings and annually to investor (30 th September)	Communications from portfolio company management and R&D teams to FactorE Board representative including a review of any documented risks and resolutions; quarterly confirmation of compliance with EMMP policies	FactorE and portfolio company
Transportation from warehouse/factory to customer	CO2 emissions	-Optimizing shipping routes - F[e] to confirm compliance with our EMMP policy	CO2/kg (Quantity transported)	Quarterly BOD meetings and annually to investor (30 th September)	Communications from portfolio company management and R&D teams to FactorE Board representative including a review of any documented	FactorE and portfolio company

					risks and resolutions; quarterly confirmation of compliance with EMMP policies	
Waste Disposal at Factory	Risk of soil, water and air pollution due to potential toxic waste particulates into the environment	-Segregation of Waste - F[e] to confirm compliance with our EMMP policy	Waste Segregation at Factory Waste generated per Quantity Processed per Month (kg)	Quarterly BOD meetings and annually to investor (30 th September)	Communications from portfolio company management and R&D teams to FactorE Board representative including a review of any documented risks and resolutions; quarterly confirmation of compliance with EMMP policies	FactorE and portfolio company
Plastic used for packaging Products	Plastic Packaging Consumed	-Alternative Packaging Option - F[e] to confirm compliance with our EMMP policy	Packaging Consumption per month	Quarterly BOD meetings and annually to investor (30 th September)	Communications from portfolio company management and R&D teams to FactorE Board representative including a review of any documented risks and resolutions; quarterly confirmation of compliance with EMMP policies	FactorE and portfolio company
Distribution of farmer sourced produce to urban consumers	Emissions from trucking for logistics	Optimized routes to be as efficient as possible	Logistics costs per kg	Included in MIS quarterly to investors	Communications from portfolio company management and R&D teams to FactorE Board representative including a review of any documented risks and resolutions; quarterly confirmation of compliance with EMMP policies	FactorE and portfolio company
“Mosaic” aggregation of smallholder farmland into	Application of crop protection for select crops	PPE, industry standard spray bags, and good agronomist-direct	Adherence to crop protection application checklists	By growing season to the BOD and external stakeholders	Communications from portfolio company management and R&D teams to FactorE Board	FactorE and portfolio company

larger units of production to grow high value and specialty crops		agricultural practice			representative including a review of any documented risks and resolutions; quarterly confirmation of compliance with EMMP policies	
Fully-integrated remote refrigeration, processing and storage solutions	Leakage of refrigerant from the cooling compressor and emissions and e waste at end of life from solar panels and batteries	FactorE will review portfolio companies for compliance with our EMMP policy	Management team reviews overall environmental risks, evaluate the likelihood and impact of each risk, and the mitigation techniques annually	Quarterly communications at Board meetings	Communications from portfolio company management and R&D teams to FactorE Board representative including a review of any documented risks and resolutions; quarterly confirmation of compliance with EMMP policies	FactorE and portfolio company

Annex C: Environmental Monitoring and Mitigation Progress

To be reported on after the first tranche of seed investment is completed.

1. Activity	2. Mitigation Measure	3. Status of Mitigation Measures	4. Outstanding Issues Related to Required Conditions	5. Observations / Remarks
Investing in biogas companies	FactorE will review portfolio companies for compliance with our EMMP policy.	Sistema.bio provided Factor[e] with environmental policy and procedures as part of investment due diligence.	There were no outstanding issues identified as part of Factor[e]’s EMMP review of Sistema.bio.	Sistema.bio’s environmental policies satisfy Factor[e]’s expectations and we will continue to ensure compliance is maintained on a quarterly basis as well review the results of the annual environmental audits.
Investing in cold plasma research and development companies	FactorE will review portfolio companies for compliance with our EMMP policy.	Clean Crop Technologies provided Factor[e] with environmental policy and procedures as part of closing the investment transaction	There were no outstanding issues identified as part of Factor[e]’s EMMP review of Clean Crop Technologies.	Clean Crop Technologies’ environmental policies satisfy Factor[e]’s expectations and we will continue to ensure compliance is maintained on a quarterly basis.
Investing in dehydrated food sourcing and processing companies	FactorE will review portfolio companies for compliance with our EMMP policy.	S4S Technologies provided Factor[e] with environmental policy and procedures as part of closing the investment transaction	There were no outstanding issues identified as part of Factor[e]’s EMMP review of S4S Technologies.	S4S Technologies’ environmental policies satisfy Factor[e]’s expectations and we will continue to ensure compliance is maintained on a quarterly basis
Investing in distribution of farmer sourced produce to urban consumers	FactorE will review portfolio companies for compliance with our EMMP policy.	Crofarm Agriproducts provided Factor[e] with environmental policy and procedures as part of closing the investment transaction	There were no outstanding issues identified as part of Factor[e]’s EMMP review of Crofarm Agriproducts	Crofarm Agriproducts’ environmental policies satisfy Factor[e]’s expectations and we will continue to ensure compliance is maintained on a quarterly basis
Investing in “mosaic” aggregation of smallholder farmland into larger units of production to grow high	FactorE will review portfolio companies for compliance with our EMMP policy.	Cinch Markets provided Factor[e] with environmental policy and procedures as part of closing the investment transaction	There were no outstanding issues identified as part of Factor[e]’s EMMP review of Cinch Markets	Cinch Markets’ environmental policies satisfy Factor[e]’s expectations and we will continue to ensure compliance is maintained on a quarterly basis

value and specialty crops				
Investing in fully-integrated remote refrigeration, processing and storage solutions	FactorE will review portfolio companies for compliance with our EMMP policy.	InspiraFarms provided Factor[e] with environmental policy and procedures as part of closing the investment transaction	There were no outstanding issues identified as part of Factor[e]’s EMMP review of InspiraFarms	InspiraFarms’ environmental policies satisfy Factor[e]’s expectations and we will continue to ensure compliance is maintained on a quarterly basis

Annex D: Gender Survey Baseline Data

Portfolio Company	Explicit Gender Strategy Y/N	Formalized Gender Data Tracking Y/N	% of Female Representation					Pay Gap (% reduction)	
			Founding Team	Employee/Founder stock and options	Active Board Members	Sr Mgmt Team	Total Employees	Non-mgmt employees	Mgmt employees
Clean Crop	N	N	0%	0%	50%	0%	50%	11%	n/a
Sistema.bio	Y	Y	0%	n/a	16%	43%	26%	0%	0%
InspiraFarms	N	N	0%	2%	20%	50%	27%	n/a	n/a
S4S	Y	N	29%	n/a	0%	33%	35%	0%	0%
Cinch	N	N	0%	0%	66%	42%	51%	18%	43%

Portfolio Company	% Female				HR Policies and Strategies in Place Y/N						
	New Hires, LTM	Promotions, LTM	Turnover, LTM	Training attendees, LTM	Non-discrimination, equal employment opportunities	Anti-harassment, violence and sexual exploitation	Wage equity based on regular salary reviews	Paid maternity beyond regulatory requirements	Paid paternity beyond regulatory requirements	Private, safe accommodations for nursing mothers available primarily for breastfeeding/pumping	Flexible work options
Clean Crop	56%	100%	0%	50%	Y	N	N	N	N	N	Y
Sistema.bio	n/a	n/a	n/a	26%	Y	Y	N	Y	Y	Y	Y
InspiraFarms	0%	n/a	0%	n/a	Y	Y	N	N	N	N	Y
S4S	22%	91%	3%	100%	Y	Y	Y	N	N	Y	Y
Cinch	32%	67%	20%	30%	Y	Y	Y	Y	Y	N	N