

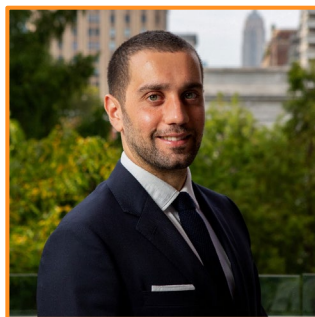


Regenerative Carbon
New York University

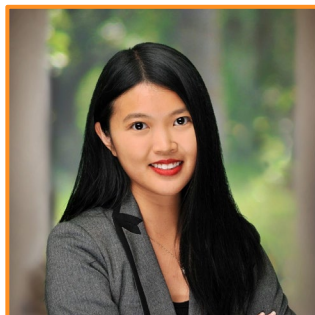
**IMPACT INVESTING
CHALLENGE 2022**



Regenerative Carbon



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THE PROBLEM

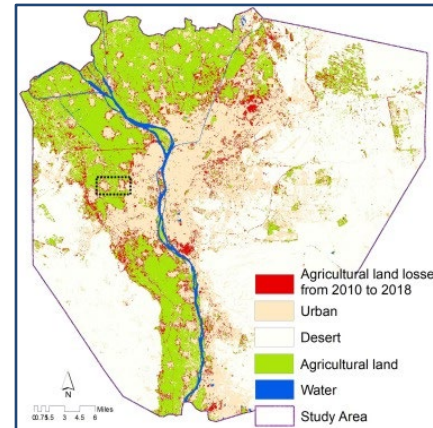
To combat climate change, developing nations require significant foreign investment. Without this investment, it is not feasible for developing nations to leapfrog carbon intensive practices that enabled the global West to develop their economies.

Agriculture is no exception.

Meanwhile, Egypt faces development gaps:

- Food insecurity in Egypt accentuated by the food crisis in the MENA region due to the war in Ukraine
- High rates of poverty among Egyptian farmers
- Wide rural-urban disparities in Egyptian society
- Limited agricultural transformation and limited sustainability of agricultural production
- Limited preservation of arable lands
- Lack of carbon market in Egypt

About 96% of Egypt's total area is desert. Heavy burden is placed on the available arable land (~3% of the total area) which sustains on average 8 persons per acre is highly fertile and is cropped more than once a year, causing depletion of the soil.

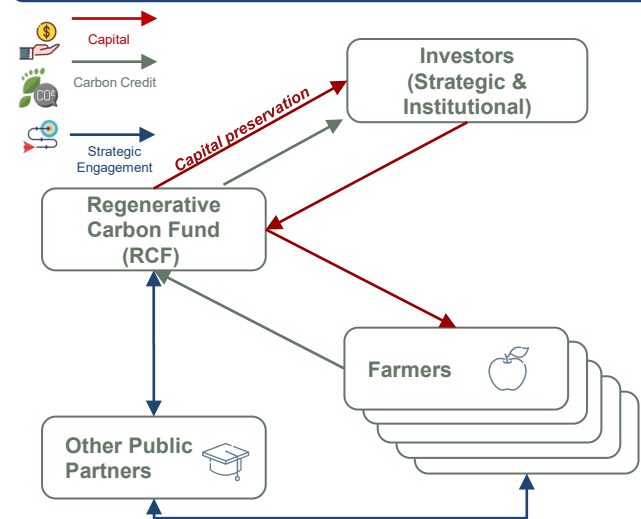


From 1990 to 2016, synthetic fertilizers drove ~27.3% of Egypt's agricultural GHG emissions, behind only enteric fermentation²



(1) <https://www.fao.org/3/v9978e/v9978e0e.htm>
 (2) <https://www.statista.com/statistics/979312/egypt-greenhouse-gas-emission-from-agriculture-by-sector/>
 (3) <https://www.bain.com/insights/helping-farmers-shift-to-regenerative-agriculture/>
 (4) <https://www.sciencedirect.com/science/article/abs/pii/S0264837719315170>

The Idea



Regenerative Agriculture

- Regeneratively grown produce fetches a premium on market
- Increases farmer revenue and reduces costs
- Captures GHG emissions
- Prevents depletion of soil fertility
- Recognized Practices⁽²⁾:
 - Reduced (>50%) or no-till farming
 - Crop rotation
 - Composting
 - Cover cropping
 - Increased crop diversity

(1) <https://pressroom.ifc.org/all/pages/PressDetail.aspx?ID=26078>
 (2) <https://www.nifa.usda.gov/>

THE SOLUTION

The Institution



- 1,200 branches nationwide, including 451 branches in Upper Egypt alone
- Dominant player in the agricultural sector with no or little competition
- Existing ABE-IFC partnership(s)¹

The Investment

- Initial equity investment in ABE of \$10 million USD to setup fund
- Finance the investment and returns from OECD nations (or companies in their constituencies) with active carbon markets who are interested in claiming some ownership over the emissions reductions from farmers transition to regenerative agriculture.

The Innovation

INNOVATION



The Team

Our team of seasoned Finance MBA graduates with experience in capital markets and investment funds, are ready to provide ABE with guidance and financial modeling support before and throughout the investment period.

DEVELOPMENT IMPACT & SUSTAINABILITY

Key Beneficiaries

Farmers

- Farmers receive capital at a low cost that they may not otherwise have access to
- Regenerative agriculture transition increases the longevity of farmland and increases farmer income
- Farmers gain education and insights into modern and progressive growing techniques
- Diversification of income stream away from remittances, which were cutoff during pandemic

Egypt

- Egypt gains another avenue for foreign investment in its agricultural industry
- Longevity and success of farmers supports growing economy and meets goals of country leadership. ABE has a specific presidential mandate to improve the condition of small farmers by providing a "Decent Life."
- Carbon reduction from regenerative agriculture helps Egypt meet climate goals

Investors

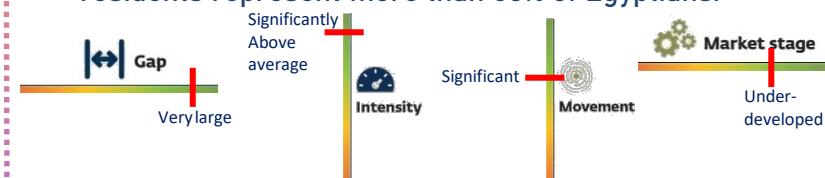
- Investors take yield in the form of carbon reduction credits
- For investing companies (through IFC), credits help firms' climate goals while growing access to regeneratively grown food
- For investing governments / sovereign funds (through IFC), governments grow their commitment to developing nations' decarbonization strategies

ESG Challenges

- Measuring positive and direct Environmental impact in Egypt with operational savings from reducing wastewater, avoiding erosion, and reducing use of fertilizers and pesticides.
- Equitable loan approval with equal Gender representation in a traditionally patriarchal society.
- Partnership with ABE ensures appropriate corporate governance controls are in place. Certifies that funds are appropriately disbursed to Egyptian farmers to achieve the highest impact. Monitors that regenerative practices are implemented over the longer term.

Impact Measurement

- Using Anticipated Impact Measuring and Monitoring (AIMM) framework for Agribusiness sector: High Impact
- Project Gap: Agricultural sector in Egypt dominated by BOP farmers with limited capacity, limited access to inputs and finance, and with no collective organization or bargaining power in off-take arrangements.
 - Project Intensity: each loan will create and safe-guard at least 60 jobs. Small-scale farmers and rural residents represent more than 60% of Egyptians.



- Market Stage: Limited use of technology, reliance on outdated and inefficient production. No pre-harvest financing. Low yields and low incomes. Highly underdeveloped Carbon Credit markets.
- Market Movement: Egyptian government supportive of agricultural development projects. Long-term commitment and extensive network of ABE, allows for the scale of market change.

Impact Monitoring

Partnership with third party carbon credit marketplaces



Creating Markets, Creating Opportunities

IMPLEMENTATION AND FEASIBILITY

Key Implementation Components

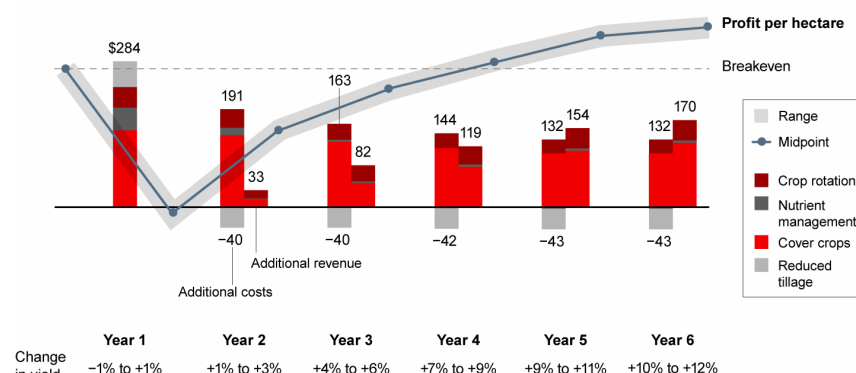
- Flexible loan sizing – with a preference towards larger farmers (finance + scaling)
 - We estimate an implementation cost of ~\$200-300 per acre, which would help calculate loan sizes
 - Focusing on smaller farmers maximizes impact and maintains flexibility for scaling to larger farms
- Leveraging expertise (implementation)
 - Implementation will require boots on the ground effort with ABE and international partners
 - Monitoring + verification are risks
- Aligning cash flows (financial feasibility)
 - Because farmers will take some time to realize their value, we propose steady loan repayment from Year 5 onward. Carbon credits take on role of interest compared to a traditional loan
 - Assuming investors value carbon credits at least \$15/tonne, equivalent returns range from 4-7%, with significant upside

Risk + Mitigation

- Farmer defaults challenge IFC returns
- Leverage ABE loan-vetting capabilities to preempt credit risk
- Roll default rates into financial model
- Farmers are unable or unwilling to convert to regenerative agriculture post-loan
- Loan terms require good-faith effort to convert, but revert to low-interest loan terms if carbon credits are not viable
- Lean on incentives of enhancing crop yield
- Verification and measurement of regenerative transition and carbon sequestration
- Train and leverage ABE network to engage with farmers
- Engage 3rd party organizations to support training / follow-up efforts

Regenerative agricultural can improve returns for farmers...

Profit or loss (per hectare, in USD)



...while monetizing an increasingly valuable asset

EU carbon price soars to a new record high
Closing price of allowances traded under the EU ETS, (€)



Q&A

Regenerative Carbon

New York University

THANK YOU!