Imara Technology Company Ltd. Business Plan: 2021 – 2025

Prepared for submission to Tanzania Investment Center
December 23, 2020

Imara Technology Company Ltd.
PO Box 1763, Sido Plot 42, Unga Ltd.
Arusha, Tanzania

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Submission for Tanzania Investment Center

This business plan has been prepared for submission to Tanzania Investment Center (TIC) for registration of Imara Tech as a foreign company. The specific requirements for the TIC submission and their location in the plan are given below:

Introduction

Overview of Company

Imara Technology Company Ltd ("Imara Tech") is a Tanzania-based start-up that manufactures agricultural equipment for smallholder farming communities. As a social enterprise, Imara Tech seeks to generate positive social impact through business.

Imara Technology Company Ltd is a limited liability company registered in Tanzania in 2016. The company headquarters are based in Arusha, Tanzania with the primary workshop operating out of the Small Industries Development Organization (SIDO) in Unga Limited.

History of Company

Imara Tech was started by Mr. Alfred Chengula (Tanzania), Mr. Elliot Avila (United States), and Ms. Adriana Garties (United States). The formation of the company was motivated by an engineering project that Mr. Avila started working on as a student at Massachusetts Institute of technology (MIT) to develop a multi-crop threshing machine that would reduce time and labor on small farms. Following the completion of the engineering work, Imara Tech was developed as a business concept that would enable scaling of technologies such as the Multi-Crop Thresher (MCT) so that small farms would gain access to and benefit from them.

Imara Technology Company Ltd. (Imara Tech) was officially registered locally as a Limited Liability Company in 2016. Between 2016 and 2018, Imara Tech conducted small-scale pilots of its products to gather data that would inform the business case. The pilots were managed by Mr. Chengula and largely self-funded. During this time, Mr. Avila and Ms. Garties worked with organizations in the off-grid energy sector on product development and engineering.

At the beginning of 2019, Imara Tech received its first formal investment of $90,000 in order to begin business operations. The company established its first workshop in the Small Industries Development Organization (SIDO) grounds at Unga Limited, Arusha, and hired a team to begin producing and selling the MCT. The company gained limited market traction during its first year of operation, but learned lessons that would inform its future growth.

At the beginning of 2020, Imara Tech secured grant funding worth $400,000 and additional debt capital of $60,000 to expand the business and develop new impactful products for the market through the design of efficient solar-powered agricultural technologies. In parallel with Imara Tech's R&D, the company has gained commercial traction in 2020 by selling more than 200 of its MCTs.

Currently, Imara Tech is focused on growing the business. Following participation in an innovation accelerator program with the World Food Program (WFP) in 2020, Imara Tech has successfully applied for $75,000 in new grant funding for 2021 to scale its production and commercial operations into the Kigoma region of Tanzania. Based on market traction and debut of new solar-powered products in 2021, Imara Tech expects to raise a seed round of $550,000 at the end of 2021 that will enable it to scale further.

Though still a young company, Imara Tech has an ambitious vision to end manual labor on small farms in Tanzania and across Africa.

Project Objectives

Vision

Imara Tech's vision is to bring prosperity, resilience, and sustainability to every farm in Africa.

Mission

End manual labor on small farms

Values

Solution-Oriented

When faced with challenges, we focus on what we can do.

Effort

We put effort into our work because we know that hard work is good work. We strive to succeed to the best of our abilities. If we fail, it's never because we didn't try hard enough.

Find a Better Way

A culture of innovation and continuous improvement. Constantly seeking personal and professional growth.

Operate as an Owner

We think big and move fast. We roll up our sleeves to get the work done. We use resources like they are our own.

Big Picture

We relate what we do to the bigger picture. How do our actions affect our company? How does our company change the world?

Investor Profiles

Management Profiles

Elliot Avila
CEO and co-founder

Mr. Elliot Avila is an engineer and businessman experience in product design, business development, and team management in East Africa.

Mr. Avila received his Bachelors of Science in Mechanical Engineering from the Massachusetts Institute of Technology (MIT) in 2014. As an engineer, he has contributed to multiple projects focused on improving livelihoods and small business development. His work includes: designing cargo tricycles for collection of recycling materials in Nigeria; design of art supplies production systems in India; development of avocado oil extraction methods in Kilimanjaro, Tanzania; design and development of efficient and income-generating appliances for use with solar systems; design, development, and manufacturing of agricultural equipment for small farms.

Mr. Avila's professional experience has grown beyond engineering to include business development. As CEO and founder of Imara Tech, Mr. Avila has been recognized for the development of the company's sustainable business concept through awards such as the 2015 MIT D-lab Scale-ups Fellowship and the 2016 Siemens Stiftung empowering people. Award. Mr. Avila has represented Imara Tech to global audiences, conducting business pitches in Washington D.C., Nairobi, Dar es Salaam, global online webinars, and a TedX talk. Mr. Avila has also applied his business acumen to development of new business concepts, including projects such as: advising on the business development of an avocado oil extraction SME in Kilimanjaro, Tanzania; providing business support and funding to an electric motorcycle start-up in Arusha, Tanzania; providing feedback to early-stage entrepreneurs in Tanzania through accelerator programs.

Through his engineering and business development work, Mr. Avila has often held positions of management and leadership. Mr. Avila's recent leadership experience includes serving as the Head of Mobilab (Customer and Research Lab) at Mobisol (2018), Director of Access to Energy Lab at A2E Project at Kakute (2018-2019), and Director of Research at A2E Project at Kakute (2020).

Mr. Avila is originally from Los Angeles, California, USA and is an American citizen. Mr. Avila moved to Tanzania in 2014 and has resided in Arusha since that time. Now 28 years old, Mr. Avila is still often the youngest participant or nominee in global business competitions and conferences. In his spare time, Mr. Avila enjoys playing music, cooking food, and being physically active.

Mr. Alfred Chengula
COO and Co-founder

Mr. Alfred Chengula is a Tanzanian businessman with a passion for rural development. Originally from Mbeya, Tanzania, Mr. Chengula grew up on a small farm with his grandmother. His experiences as a child motiavted him to start a business that improves the lives of those living in rural places.

Mr. Chengula has a true entrepreneurial spirit. While in university, he started a small key chain business with one other student in order to pay for his school fees. Although the business was informal and had little capital, the business successfully employed 7 people to produce and sell 3000 keychains each week. After leaving university, Alfred briefly returned to Mbeya, where he helped managed a local hotel and helped to make it profitable.

Mr. Chengula holds a Bachelors of Arts degree in Community Development from Ardhi University. His passion for the subject led him to join Off-Grid Electric, a solar company that sells solar systems, lights, and appliances to off-grid households. While at Off-Grid Electric, Mr. Chengula managed a team of 12 sales associates and was recognized as the areas top sales officer.

In 2016, Mr. Chengula left Off-Grid Electric to join Imara Tech as a co-founder and COO . Mr. Chengula's expertise and entrepreneurial savviness helped lead the company through its early-stage market pilots. As COO, Mr. Chengula is involved in every aspect of Imara Tech, holding responsibility on sales, marketing, operations, and administration, but also involved in the company's production, product testing, fundraising, finance, and other areas.

Through his work, Mr. Chengula has been recognized as a role model for other young Tanzanian and African entrepreneurs. In 2018, Mr. Chengula was selected as one of the Young African Leaders Initiative (YALI) East Africa Fellow, for which he joined a select group of up-and-coming entrepreneurs from the East Africa Community. Mr. Chengula has given talks on his experience to aspiring entrepreneurs, sharing his story to participants in business accelerator programs such as the Anza Accelerator and the Rikolto Generation Food program. Alfred has also represented Imara Tech to global and regional audiences, including recently in the World Food Program Global Innovation Accelerator, the GIZ Innovation Challenge, and on ITV. Mr. Chengula is especially passionate about the topic of youth employment and hopes to use his story and his platform to show other young Tanzanians how they can start business that not only support themselves, but also their communities.

Adriana Garties
CTO and Co-Founder

Ms. Adriana Garties has built her career around delivering income-generating technology to small farming communities. Adriana believes wholeheartedly in the power of Tanzanian manufacturing and works tirelessly to promote it, through her words internationally and her production locally. She earned her Bachelor's degree in Mechanical Engineering from Olin College, whose revolutionary curriculum blends engineering with entrepreneurship and human-centered design.

While Adriana's design and fabrication experience ranges from millimeter-scale bio-inspired robots to single seater off-road racing vehicles, her proudest accomplishments have agricultural applications. Before moving to Tanzania, Adriana participated in the conception, development, and pilot of a low-cost greenhouse monitoring system to help small farmers in America reduce seedling losses.

Since 2015, she has lived in Arusha dedicating her professional energy to projects that support agribusiness growth in rural Tanzanian communities. At Twende Social Innovation Center, she was the product manager for a bicycle-powered maize sheller as well as the coordinator of an internship program which gave professional development, field experience, and mentorship to 18 local and international student interns over a six-month period. In addition to her job at Imara Tech, she has consulted on minigrid productive uses and advised student projects and other small agribusinesses.

As CTO of Imara Tech, Adriana has honed the multi-crop thresher to a stable product that processes a range of crops with ease, set up the first Imara Tech workshop, and built a network of more than two dozen technicians. Her most recent milestone was doubling Imara Tech's thresher output over the course of just one week, and she looks forward to more than doubling it again in 2021 to bring cutting edge products to as many Tanzanian farmers as she can.

List of Company Awards, Recognitions, and Support

Imara Tech has received multiple awards and commitments of support from organizations working to empower private sector companies that demonstrate the potential to create social impact at scale. These supporting organizations include government bodies, foundations, and international NGOs.

Imara Tech's support from these organizations is in recognition of our commitment to improve the lives of smallholder farmers and rural communities.

Awards

Siemens Stiftung empowering people. Award (2016): Imara Tech was a recipient of the Siemens Stiftung empowering people. Award in 2016 for its Multi-Crop Thresher product innovation. The award included 5,000 Euro in prize money as well as follow-on support through consulting, access to investor networks, and capacity building for the management team. Siemens Stiftung continues to publicize Imara Tech's work to its networks.

TANZ-ICT Social Innovation Fund Award (2016): Imara Tech received a 5M TZS award from the TANZ-ICT Innovation Fund in 2016 for its MCT innovation. TANZ-ICT was a joint program established between the Commission of Science and Technology (COSTECH) and the Finnish government to promote social beneficial innovations within Tanzania.

ABinbev 1st Place Innovation Challenge Award (2018): Imara Tech received first place in the ABinbev innovation challenge happening in Dar es Salaam. In addition to a cash award, Imara Tech received a

Sankalp Africa Awards Finalist (2019): Imara Tech was selected as one of 12 finalists of the 2019 Sankalp Africa Forum, a conference to connect early stage companies with investors in Africa.

Builders of Africa's Future Award (2020): Imara Tech COO Alfred Chengula was selected as one of the recipients of the Builder's of Africa's Future awards for 2020 which identified 10 promising African entrepreneurs from across the continent.

Fellowships

MIT Scale-ups Fellowship (2015): Imara Tech co-founder Elliot Avila was awarded $20,000 and a MIT Scale-Ups Fellowship for development of the Imara Tech business concept in 2015. MIT fellows receive follow-on support through consulting, access to investor networks, and capacity building.

Young Africa Leaders Initiative (YALI) East Africa Fellowship (2018): Imara Tech co-founder Alfred Chengula was selected as a class of 2018 YALI East Africa Fellow and was

Incubation and Acceleration Programs

Diaspora Demo Accelerator (2016): Imara Tech was one of 10 companies from Africa and African Diaspora entered into the Diaspora Demo Accelerator in Washington DC, USA.

SIDO Incubation Program (2019 - Present): Imara Tech was entered into the SIDO incubation program in Arusha, Tanzania in 2019. As an incubated company, Imara Tech received subsidized workshop space at the SIDO grounds and business and technical support from the government.

Anza Business Accelerator (2019): Imara Tech was one of 8 companies that was selected to participate in the Anza business accelerator program in 2019 in recognition of Imara Tech's growth and impact potential. As a participating company, Imara Tech received business advisory support and access to investor networks.

World Food Program Global Innovation Accelerator (2020): Imara Tech was one of only 4 private sector companies selected to participate in the 2020 WFP Global Innovation Accelerator out of a global pool of over 700 applicants. As part of the program, Imara Tech received tailored mentoring and support and exposure to global audiences. Following on to the accelerator program, Imara Tech has submitted a proposal for $100,000 in grant funding from WFP to scale up its concept.

GIZ Innovation Challenge (2020): Imara Tech was one of 15 companies to be selected for the GIZ Innovation Challenge 2020 as part of a cohort of impact-oriented companies that have potential to achieve UN Sustainable Development Goals.

Africa Management Institute Grow Your Agribusiness Accelerator (2020): Imara Tech was selected to participate in the Grow Your Agribusiness Accelerator 2020, a program designed for building leadership capacity of company founders operating in the agricultural sector.

Investment and Finance

Overview of Finance and Investment

Investment Financing Plan

Item	Amount
Foreign Equity	$740,000
Foreign Debt	$485,000
Local Equity	$0.00
Local Debt	$0.00
Total Finance Planned	$1,225,000

Project Finance: Secured vs. Unsecured

Item	Amount
Total Finance Required	$1,326,800
Total Finance Secured	575000
Total Finance Secured (%)	43%
Total Finance Unsecured	$751,800
Total Finance Unsecured (%)	57%

Project Investment Breakdown

Investment Breakdown	Amount
Land/Building	$75,000
Plant	$176,500
Vehicles	$150,000
Furniture and Fittings	$25,000
Pre-Expenses	$0
Others	$190,000
Working Capital	$710,300
Total	**$1,326,800**

Overview of Investment and Finance to Date

Imara Tech: Committed Investment and Funding

Date	Amount	Type	Organization	Purpose
February 2019	$50,000	Foreign Debt	Segal Family Foundation	Pre-seed funding to enable opening of Imara Tech workshop and market entry
January 2019	$40,000	Foreign Equity	Access to Energy Institute (A2EI) gGMBH	Research paper on agricultural mechanization opportunities in solar sector
November 2019	$25,000	Foreign Debt	Mitchell Avila	Cash flow management for business operations
January 2020	$10,000	Foreign Debt	Vista Ventures Social Impact Fund	Investment into sales and marketing operations for scale-up
January 2020	$220,000	Foreign Equity	UKaid	Development of solar-powered agricultural equipment
January 2020	$180,000	Foreign Equity	Access to Energy institute (A2EI) gGMBH	Development of solar-powered agricultural equipment
March 2020	$20,000	Foreign Debt	3rd Creek Foundation	Cash-flow management for R&D operations
April 2020	$20,000	Foreign Debt	Arthur B. Schultz Foundation	Cash-flow Management for R&D operations
June 2020	$10,000	Foreign Debt	Thriive (SK2 Fund)	Cash-flow Management for R&D operations
March 2021	$75,000	Foreign Equit	World Food Program	Expansion of project into Kigoma region
Total Foreign Debt				**$135,000**
Total Foreign Equity				**$515,000**
Total Funding				**$650,000**

Imara Tech: Forecasted Investment

Date	Amount	Type	Organization	Purpose
December 2021	$550,000 ($200,000 Equity, $350,000 Debt)	Foreign Equity, Foreign Debt	Seed stage investors	Scaling of company into new regions, market development

Overview of Terms and Conditions of Loans

Date	Amount	Type	Organization	T&Cs
February 2019	$50,000	Debt	Segal Family Foundation	1-year loan at 10% interest; extended to 2-years with flexible repayment schedule, expected completion 2020
November 2019	$25,000	Debt	Mitchell Avila	1-year loan at 0% interest, completed
January 2020	$10,000	Debt	Vista Ventures Social Impact Fund	2-year loan with
March 2020	$20,000	Debt	3rd Creek Foundation	2-year loan with 10% interest; kept in separate sub-reference account
April 2020	$20,000	Debt	Arthur B. Schultz Foundation	2-year loan with 10% interest; kept in separate sub-reference account
June 2020	$10,000	Debt	Thriive (SK2 Fund)	2-year loan with 10% interest; kept in separate sub-reference account

Profile of Current Investment Partners
Ordered by Amount of Investment

UKaid

Profile: UKaid is the public facing brand of Department for International Development (DFID) of the United Kingdom government. DFID programs are publicly funded through UK taxpayer money as acknowledged by the UKaid logo. DFID's main program areas include Education, Health, Social Services, Water Supply and Sanitation, Government and Civil Society, Economic Sector (including Infrastructure, Production Sectors and Developing Planning), Environment Protection, Research, and Humanitarian Assistance. DFID is now merged with the Foreign Office to create the Foreign, Commonwealth and Development Office.
Amount Invested: $220,000
Form: Grant
Date: January 2020

Access to Energy Institute (A2EI) gGMBH

Profile: Access to Energy Institute (A2EI) is a non-profit organization focused on research and development clean energy technology innovations for Africa. A2EI is the world's first collaborative, open-source R&D organization for the off-grid energy sector. In addition to conducting its own product development, A2EI partners and supports local companies that are developing clean energy technologies. The organization is headquartered in Berlin, Germany and has a branch in Arusha, Tanzania. A2EI is supported by Ikea Foundation, DOEN Foundation, Good Energies Foundation, and the Dutch Good Growth Fund.
Amount Invested: $220,000
Form: Grant
Date: January 2019 ($40,000), January 2020 ($180,000)

Segal Family Foundation

Profile: Segal Family Foundation grants its philanthropic focus to Sub Saharan Africa and community-based organizations that have the localized knowledge needed to create sustainable change in their communities. The foundation supports African-led, grassroots non-governmental organizations building healthy, productive and empathetic youth. Segal Family Foundation was created by Barry Segal in 2004. Segal Family Foundations has supported over 200 partners in sub-Saharan Africa with over $20 million USD in funding and has impacted a 8.9 million beneficiaries.
Amount Invested: $50,000
Form: Debt
Date: February 2019

Dr. Mitchell Avila

Profile: Dr. Mitchell Avila, PhD is the incoming Provost at California State University Channel Islands. Dr. Avila earned his Ph.D. in Philosophy at UC Santa Barbara in 1993, and was previously a lecturer in Philosophy at California State University of Fullerton and the outgoing Dean of Humanities at California State Dominguez Hills. As a philosopher, his scope of work focused on international justice, human rights, and religion.
Amount Invested: $25,000
Form: Debt
Date: November 2019

3rd Creek Foundation

Profile: 3rd Creek Foundation's vision is a family-run foundation that supports early stage programs that create sustained economic improvement and dignity for the ultra-poor by deploying grants and impact investments. 3rd Creek's impact investment portfolio focuses on generating social impact along with a modest amount of financial returns. 3rd Creek Foundation's vision is a world without poverty and its mission is to help individuals achieve economic independence. 3rd Creek Foundation supports projects in Africa, the Middle East, South Asia, and Central America
Amount Invested: $20,000
Form: Debt
Date: April 2020

Arthur B. Schultz Foundation

Profile: The Arthur B. Schultz Foundation (ABSF) is a small US-based foundation that offers international grants and impact investments to grassroots organizations and social enterprises focused on women's empowerment and mobility solutions for disabled persons. The Arthur B. Schultz Foundation was started in 1985 by Arthur B. Schultz, co-founder of Cobra golf, and has a small board composed partly of family members. ABSF focuses on Central America, East Africa, and the Middle East.
Amount Invested: $20,000
Form: Debt
Date: April 2020

Thriive

Profile: Thriive is a US-based non-profit charity organization that engages in grant-making and impact investments for community-based organizations around the world. Thriive's flagship program is a pay-it-forward loan, where entrepreneurs repay loans by donating an equivalent amount of service or supplies to their community. Thriive was initially a grant-making program under the Arthur B. Schultz foundation, but separated in 2010 when it was registered as a non-profit. Thriive has recently expanded its investments to include traditional debt financing instruments, but prioritizes social impact returns over financial returns.
Amount Invested: $10,000
Form: Debt

Vista Ventures

Profile: Vista Ventures Social Impact Fund ("Vista Ventures") is a U.S. registered non-profit focused on social entrepreneurs in developing countries and the infrastructure that supports them. Vista Ventures services often include advice and training for entrepreneurs regarding the expectations and requirements of various types of investors as they plan their capital attraction strategies. Vista Ventures's assets are managed under Fidelity Investments, asset manager and a discount broker with more than 27 million customers and $2.5 trillion assets under management.
Amount Invested: $10,000
Form: Debt
Date: January 2020

Proposed Implementation Plans

Proposed Implementation Schedule

Year	Key Objective	Team	Workshops	Products	Fundraising
2020	Prove market	11 FTEs	1: Arusha	MCT	Pre-Seed: $500,000 Grant funding; $60,000 Debt
2021	Growth: Add new product and expand territory	28 FTEs	2: Arusha, Kigoma	MCT, Planter	Seed: Add $505,000 Equity and Debt
2022	Growth: Refine products, build internal capacity, grow current market	29 FTEs	2: Arusha, Kigoma	MCT, Planter, Solar Mill, Solar Sheller, Solar Press	
2023	Growth: Expand territory and grow current markets	42 FTEs	3: Arusha, Kigoma, Mbeya	MCT, Planter, Solar Mill, Solar Sheller, Solar Press	
2024	Growth: Grow current markets	42 FTEs	3: Arusha, Kigoma, Mbeya	MCT, Planter, Solar Mill, Solar Sheller, Solar Press	
2025	Growth: Expand territory and grow current markets	54 FTEs	4: Arusha, Kigoma, Mbeya, +1	MCT, Planter, Solar Mill, Solar Sheller, Solar Press	

Overview of Proposed Implementation Plans: 2021-2025

Imara Tech will continue to grow over the next 5 years through regional expansion, addition of new products and revenue streams, additions to the team, and injection of new finance into the business.

Between 2021-2025, Imara Tech will open two new workshops in another region of Tanzania and hire new staff in order to serve that market with agricultural products. With a workshop currently operating in Arusha and a planned expansion to Kigoma in 2021, Imara Tech's future workshop locations will be strategically located to serve new markets, such as Mbeya and the Southern Highlands, Mwanza and the Lake Zone, and Morogoro and the Coastal Zone.

New products will be added to Imara Tech's product portfolio. Current projections are based on the addition of a mechanized planter product, but Imara Tech will hire a R&D team to support introduction of other products such as chaff cutters and other light agricultural machinery.

Imara Tech will fundraise a seed round of finance at the end of 2021, expected to be $550,000 in a mix of debt and equity funding. This will fuel Imara Tech's growth between 2021-2022, when the company will consider to raise a Series A round of funding for continued growth.

By the end of 2025, Imara Tech projects to have a profitable business employing 54 FTEs and 274 seasonal employees that serve 4 regional markets in Tanzania. Based on traction, the company will raise a new round of funding in 2025 to fully serve the Tanzanian market.

For more details, see "Key Drivers of Financial Projections", page 25.

Production Process

Overview

Imara Tech manufactures agricultural equipment using just-in-time manufacturing principles and a local manufacturing supply chain.

Through its operations, Imara Tech will improve existing local manufacturing capacity and create new local manufacturing capacity. This will strengthen existing manufacturing jobs and create new manufacturing jobs in Tanzania (see Financial and Economic Analysis).

Production Model

Imara Tech employs full time staff that consists of skilled manufacturing laborers and management. This staff oversees the product manufacturing process, fabricates components, and creates assemblies.

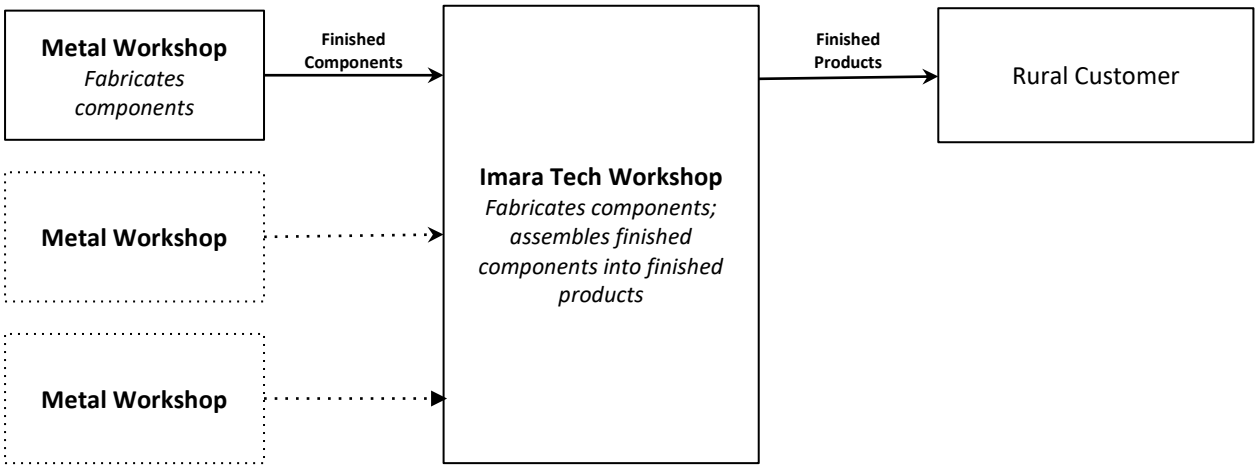
Imara Tech's manufacturing capacity is supplemented by a network of local manufacturers, such as metal workshops and fabricators. Imara Tech partners with these manufacturers and trains them to fabricate components used in Imara Tech products. Imara Tech then distributes part orders to this network and uses the completed parts in the assembly of its products. In this way, Imara Tech serves as a link between local suppliers and rural customers, creating an efficient supply chain that leverages existing production capacity to serve rural markets at scale.

Production Capacity

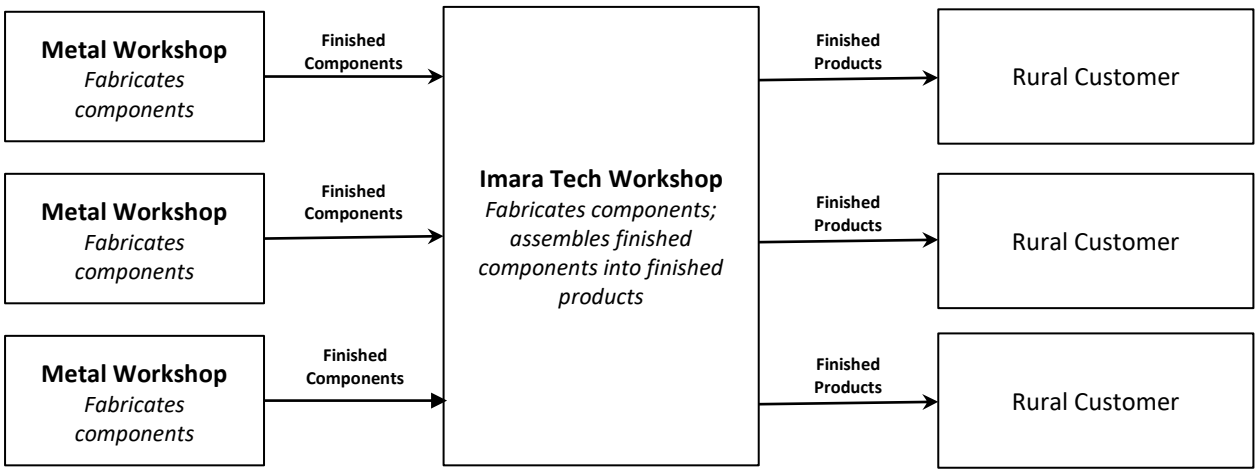
Imara Tech currently has the capacity to produce 20 of its Multi-Crop Thresher (MCT) products each week, (1040 units per year). By 2021, Imara Tech's production capacity at its Arusha workshop will expand to 50 units per week (2,600 units per year). This production capacity will continue to expand with the addition of new workshops. Excess production capacity will be dedicated to other products.

Production Capacity	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Max Weekly Capacity	20	70	150	200	250	300
Max Annual Capacity	1040	3640	7800	10400	13000	15600

Production Model



Above: Imara Tech manufacturing model in low season



Above: Imara Tech manufacturing model during high season

Production Processes

Status	Internal Processes	Outsourced Processes
Current	Welding Cutting (Angle Grinder) Bending Drilling (Hand-held) Finishing Painting Assembly	Welding Cutting (Shear and Angle Grinder) Bending Rolling Drilling (Hand-held, standing) Turning (Lathe) Aluminum Casting Finishing Painting
Planned	Rolling CNC Laser Cutting Metal Hardening CNC Turning (Lathe)	

Sources of Technology

Item	Usage	Source	Current Amt.	Planned Amt. 2025	Total Value
Angle Grinder	Cutting, finishing	Local	3	42	$12,600.00
Welding Machine	Joining metal	Local	3	28	$14,000.00
Hand-held Drill	Drilling	Local	3	42	$12,600.00
1kW Air Compressor	Painting	Local	1	7	$5,600.00
Rolling Machine	Rolling metal	Local	0	5	$5,500.00
CNC Fiber Laser Cutting Machine	Cutting metal profiles	Foreign	0	1	$35,000.00
Furnace	Hardening metal	Foreign import, local construction	0	8	$8,000.00
Roll Grinding Machine	Fluting and grinding rolls	Foreign	1	3	$60,000.00
CNC Lathe	Turning metal	Foreign	0	3	$60,000.00

Details of Vehicle and Plant Investment Costs (Foreign and Local Capital Expenditure)

Vehicle and Plant Investment Costs

CAPEX	2020	2021	2022	2023	2024	2025
Local Investment Purchases	$6,400.00	$7,500.00	$1,100.00	$7,500.00	$1,100.00	$13,900.00
Net to Date	$6,400.00	$13,900.00	$15,000.00	$22,500.00	$23,600.00	$37,500.00
Foreign Investment Purchases	$47,000.00	$31,000.00	$13,000.00	$44,000.00	$10,000.00	$44,000.00
Net to Date	$47,000.00	$78,000.00	$91,000.00	$135,000.00	$145,000.00	$189,000.00
Total Investment Purchases	$53,400.00	$38,500.00	$14,100.00	$51,500.00	$11,100.00	$57,900.00
Net to Date	$53,400.00	$91,900.00	$106,000.00	$157,500.00	$168,600.00	$226,500.00

Financial and Economic Analysis

Financial Projections: Profit and Loss

P&L Statement	2020	2021	2022	2023	2024	2025
Revenue	$ 140,000.00	$ 356,678.00	$ 777,640.00	$ 1,890,540.00	$ 3,031,200.00	$ 5,214,600.00
COGS	$ 116,930.00	$ 261,730.00	$ 433,040.00	$ 942,070.00	$ 1,287,100.00	$ 1,866,170.00
Gross Profit	**$ 23,070.00**	**$ 94,948.00**	**$ 344,600.00**	**$ 948,470.00**	**$ 1,744,100.00**	**$ 3,348,430.00**
SG&A	$ 123,090.00	$ 181,660.00	$ 246,296.00	$ 405,890.40	$ 576,343.96	$ 957,825.55
R&D	$ 102,754.00	$ 79,833.90	$ 38,882.00	$ 94,527.00	$ 151,560.00	$ 260,730.00
Other Income	$ 250,194.00	$ 226,760.00	$ -	$ -	$ -	$ -
Other Expenses	$ 47,498.17	$ 31,000.00	$ -	$ -	$ -	$ -
Pre-Tax Profit	**$ (78.17)**	**$ 29,214.10**	**$ 59,422.00**	**$ 448,052.60**	**$ 1,016,196.04**	**$ 2,129,874.45**
Tax	$ -	$ 8,740.78	$ 17,826.60	$ 134,415.78	$ 304,858.81	$ 638,962.33
Net Income	**$ (78.17)**	**$ 20,473.32**	**$ 41,595.40**	**$ 313,636.82**	**$ 711,337.23**	**$ 1,490,912.11**
Net Income to Date	**$ (78.17)**	**$ 20,395.15**	**$ 61,990.55**	**$ 375,627.37**	**$ 1,086,964.60**	**$ 2,577,876.71**

Financial Projections: Cash Flow Statement

Cash Flow Statement	2020	2021	2022	2023	2024	2025
Net Income	$ (78.17)	$ 20,473.32	$ 41,595.40	$ 313,636.82	$ 711,337.23	$ 1,490,912.11
Change in A/R	$478.46	$ -	$ -	$ -	$ -	$ -
D&A	$ 1,778.17	$ 4,168.17	$ 35,778.17	$ 82,768.17	$ 160,878.17	$ 363,708.17
New Inventory	$ 11,250.00	$ 9,218.00	$ 20,072.00	$ 20,700.00	$ 4,860.00	$ 16,200.00
Other PP&E Inventory	$ 47,000.00	$ 31,000.00	$ -	$ -	$ -	$ -
Net Other Adjustments	$ 49,059.96	$ -	$ -	$ -	$ -	$ -
CFO	**$ (105,131.50)**	**$ (15,576.51)**	**$ 57,301.57**	**$ 375,704.99**	**$ 867,355.40**	**$ 1,838,420.28**
PP&E	$ (6,400.00)	$ (22,500.00)	$ (219,100.00)	$ (446,500.00)	$ (786,100.00)	$ (1,972,900.00)
CFI	**$ (6,400.00)**	**$ (22,500.00)**	**$ (219,100.00)**	**$ (446,500.00)**	**$ (786,100.00)**	**$ (1,972,900.00)**
PP&E Grants	$ 47,000.00	$ 31,000.00	$ -	$ -	$ -	$ -
Loans	$ 45,000.00	$ (45,000.00)	$ -	$ -	$ -	$ -
Foreign Equity	$ -	$ -	$ 550,000.00	$ -		$ -
CFF	**$ 92,000.00**	**$ 10,000.00**	**$ 550,000.00**	**$ -**	**$ -**	**$ -**
Net Cash Flow	**$ (19,531.50)**	**$ 497,923.49**	**$ (161,798.43)**	**$ (70,795.01)**	**$ 81,255.40**	**$ (134,479.72)**
Beginning Balance	$ 900.12	$ (18,631.38)	$ 479,292.11	$ 317,493.68	$ 246,698.67	$ 327,954.07
Ending Balance	$ (18,631.38)	$ 479,292.11	$ 317,493.68	$ 246,698.67	$ 327,954.07	$ 193,474.35

Financial Projections – Balance Sheet

Balance Sheet	2020	2021	2022	2023	2024	2025
Cash	$ (18,631.38)	$ 479,292.11	$ 317,493.68	$ 246,698.67	$ 327,954.07	$ 193,474.35
Inventory	$ 24,733.93	$ 33,951.93	$ 54,023.93	$ 74,723.93	$ 79,583.93	$ 95,783.93
Tax Credit	$ 1,353.27	$ 1,353.27	$ 1,353.27	$ 1,353.27	$ 1,353.27	$ 1,353.27
Other	$ 4,724.03	$ 4,724.03	$ 4,724.03	$ 4,724.03	$ 4,724.03	$ 4,724.03
Total Current Assets	**$ 12,179.85**	**$ 519,321.34**	**$ 377,594.91**	**$ 327,499.90**	**$ 413,615.30**	**$ 295,335.58**
PP&E	$ 59,525.50	$ 113,025.50	$ 332,125.50	$ 778,625.50	$ 1,564,725.50	$ 3,550,425.50
Accumulated D&A	$ 2,994.49	$ 7,162.66	$ 42,940.83	$ 125,709.00	$ 286,587.17	$ 650,295.34
Total Long-Term Assets	**$ 56,531.01**	**$ 105,862.84**	**$ 289,184.67**	**$ 652,916.50**	**$ 1,278,138.33**	**$ 2,900,130.16**
Total Assets	**$ 68,710.86**	**$ 625,184.18**	**$ 666,779.58**	**$ 980,416.40**	**$ 1,691,753.63**	**$ 3,195,465.74**
Short-Term Debt	$ 45,000.00	$ -	$ -	$ -	$ -	$ -
Other Current Liabilities	$ -	$ -	$ -	$ -	$ -	$ -
Total Current Liabilities	**$ 45,000.00**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Other Long-Term Liabilities	$ 2,673.82	$ 2,673.82	$ 2,673.82	$ 2,673.82	$ 2,673.82	$ 2,673.82
Total Long-Term Liabilities	**$ 2,673.82**	**$ 2,673.82**	**$ 2,673.82**	**$ 2,673.82**	**$ 2,673.82**	**$ 2,673.82**
Total Liabilities	**$ 47,673.82**	**$ 2,673.82**	**$ 2,673.82**	**$ 2,673.82**	**$ 2,673.82**	**$ 2,673.82**
Retained Earnings	$ (26,354.26)	$ (5,880.94)	$ 35,714.46	$ 349,351.28	$ 1,060,688.50	$ 2,551,600.62
Share Capital	$ 391.30	$ 391.30	$ 391.30	$ 391.30	$ 391.30	$ 391.30
Grant Funding	$ 78,000.00	$ 78,000.00	$ 78,000.00	$ 78,000.00	$ 78,000.00	$ 78,000.00
Equity Investment	$ 550,000.00	$ 550,000.00	$ 550,000.00	$ 550,000.00	$ 550,000.00	$ 550,000.00
Total Equity	**$ 622,510.36**	**$ 664,105.76**	**$ 977,742.58**	**$ 1,689,079.80**	**$ 3,179,991.92**	**$ 622,510.36**
Check	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00

Key Drivers of Financial Projections

Scaling of Sales Channels Across Regions

Imara Tech will scale through the addition of new workshop operational units, growing from 1 single workshop to 4 by the end of 2025. From each workshop, 4 Sales Officers will oversee a Sales Agent network that sells Imara Tech products on commission. As the organization matures, each Sales Officer will oversee an increasing number of Sales Agents.

Projections	2020	2021	2022	2023	2024	2025
Workshops	1	2	2	3	3	4
Sales Officer per Workshop	1	4	4	4	4	4
Agents per Sales Officer	25	7	8	9	9	9
Total Agents	25	56	64	108	108	144

Introduction of New Products

In 2020, Imara Tech's core business is the sale and distribution of the Multi-Crop Thresher product. Through the addition of new products into its product portfolio, Imara Tech will scale its profit and impact.

In 2021, Imara tech will begin sales of a mechanized planting machine. This product and other future products will contribute to the expansion of Imara Tech's primary product portfolio which is sold through Imara Tech's agent model.

Imara Tech will also complete development of three solar-powered technologies in 2021: a solar mill, oil press, and peanut sheller. These technologies will be a part of a Rural Service portfolio and create new revenue streams for Imara Tech, as they will be implemented as service businesses owned and operated by Imara Tech.

Projections	2020	2021	2022	2023	2024	2025
Multi-Crop Thresher	225	400	512	972	1080	1440
Planting Machine	0	56	192	540	864	1152
Solar Mill	0	0	10	20	40	100
Solar Oil Press	0	0	10	20	40	100
Solar Peanut Sheller	0	0	10	20	40	100

Market Study, Financial Analysis, and Economic Analysis of Products

Key Drivers of Market Studies

Smallholder farms are numerous in Tanzania. A 2013 study by Food and Agriculture Organization (FAO) found that there were nearly 5M farms smaller than 3.31 hectares.

Mechanization on smallholder farms remains low in Tanzania. A 2011 Food and Agriculture Organization (FAO) found that 2.9% of farms in Tanzania were using motorized equipment nationally.

Data	Smaller Farm	Other Farm	Nationally
Average Farm Size (ha)	1.2	5.33	1.89
Farm Size Range (ha)	0 - 3.31	3.31 - 21.41	0 - 21.41
Number of Holdings	4,964,306	1,000,475	5,964,781
% of Households Using Motorized Equipment	1.4%	10.4%	2.9%
Number of Holdings Without Motorized Equipment	4,894,806	896,426	5,791,802

Summary of Market Study, Financial Analysis, and Economic Analysis

Market Study: 2020-025

Market Study	2020	2021	2022	2023	2024	2025
Market Value	$510,007,341	$510,007,341	$510,007,341	$510,007,341	$510,007,341	$510,007,341
New Market Capture	$156,375	$524,800	$2,248,500	$6,237,600	$12,501,500	$21,543,600
Market Capture Net to Date	$156,375	$681,175	$2,929,675	$9,167,275	$21,668,775	$43,212,375
New Market Capture %	0.0%	0.1%	0.4%	1.2%	2.5%	4.2%
Market Capture Net to Date %	0.0%	0.1%	0.6%	1.8%	4.2%	8.5%

Financial Analysis: 2020-2025

Financial Analysis	2020	2021	2022	2023	2024	2025
Total Revenue	$156,375.00	$524,800.00	$2,248,500.00	$6,237,600.00	$12,501,500.00	$21,543,600.00
Total COGS	$116,930.00	$355,470.00	$1,062,960.00	$2,352,950.00	$4,205,740.00	$6,813,010.00
Gross Profit	$39,445.00	$169,330.00	$1,185,540.00	$3,884,650.00	$8,295,760.00	$14,730,590.00
Gross Profit (%)	25%	32%	53%	62%	66%	68%
Operating Expenses	$23,966.92	$84,120.00	$512,121.00	$1,216,970.40	$2,373,018.96	$4,041,205.55
Net Profit	$15,478.08	$85,210.00	$673,419.00	$2,667,679.60	$5,922,741.04	$10,689,384.45
Net Profit (%)	10%	16%	30%	43%	47%	50%

Economic Analysis: 2020-2025

Economic Analysis	2020	2021	2022	2023	2024	2025
Imara Tech Spending	$112,500	$349,600	$1,463,000	$4,228,000	$7,804,000	$12,026,400
Net to Date	$112,500	$462,100	$1,925,100	$6,153,100	$13,957,100	$25,983,500
Induced Spending	$489,375	$1,696,500	$10,312,125	$33,519,000	$62,883,750	$96,642,000
Net to Date	$489,375	$3,684,675	$18,847,900	$66,976,000	$159,424,850	$306,103,150
Total Economic Impact	$601,875	$2,046,100	$11,775,125	$37,747,000	$70,687,750	$108,668,400
Net to Date	$601,875	$2,647,975	$14,423,100	$52,170,100	$122,857,850	$231,526,250
Multiplier Effect	5.4	5.9	8.0	8.9	9.1	9.0
Net to Date	5.4	5.7	7.5	8.5	8.8	8.9

Analysis: Multi-Crop Thresher (MCT)

Market Study of Multi-Crop Thresher

Imara Tech's Multi-Crop Thresher is sold for $700 to customers that operate it as a service business. From surveys done with existing customers, Imara Tech estimates that most customers use the MCT as a business and that each of these operators provides threshing services to an average of 150 acres of farm, either 50 small farms or 11.5 larger farms. Assuming a 3-year product lifetime, Imara Tech will capture 1.87% of the total market for threshers by 2025.

Market Study: MCT

Unit	Small Farms	Other Farms	Nationally
Total Number of Farms	4,964,306	1,000,475	5,964,781
Total Number of Farms Without Mechanization	4,894,806	896,426	5,791,802
Farms Served per MCT	50	11.5	32
Total Number of Threshers at Saturation	99,286	86,998	186,399
Total Number of Threshers Needed for Saturation	97,896	77,950	180,994
Market Size: Total Value of Market	$69,003,853.40	$60,463,489.13	$129,547,587.34
Market Size: Total Value of Unserved Market	$68,037,803.40	$54,175,310.43	$125,790,699.69
Total MCT Sales 2023-2025			3,492
Total Market Penetration by 2025			1.87%
Total Market Share by 2025			2,426,940

Financial Analysis of Multi-Crop Thresher

In 2020, Imara Tech's primary product is the MCT, and thus accounts for 100% of our revenue generated. With the addition of other products to our portfolio, the MCT will account for 19.2% of revenue generated.

Unit Economics: MCT

Data	Value
Revenue per Sale	$695.00
Cost of Goods Sold	$450.00
Gross Profit	$245.00
Gross Margin	35.25%
Cost of Sale	$50.00

Financial Projections: MCT

Projections	2020	2021	2022	2023	2024	2025
Total MCT Sales	225	400.4	512	972	1080	1440
Total Imara Tech Revenue	$140,000	$356,678	$777,640	$1,890,540	$3,031,200	$5,214,600
Revenue from MCT Sales	$140,000	$278,278	$355,840	$675,540	$750,600	$1,000,800
Revenue from MCT Sales (%)	100.00%	78.02%	45.76%	35.73%	24.76%	19.19%

Economic Analysis of Multi-Crop Thresher

Imara Tech's MCT are sold to customers who use it as a business. Based on surveys of existing MCT users, it is estimated that each thresher generates $1,000 per year selling threshing services to other farms (lower bound estimate, assuming $20 net profit earned per farm at 50 small farms). Assuming a 3-year equipment lifespan, each MCT sale creates 1 new seasonal agricultural job that yields a 332% ROI and $2,305 in net profit for the operator of the machine.

Business Model: MCT

Data	Value
Annual Operating Income Earned from MCT	$1,000.00
Total CAPEX Cost	$695.00
Equipment Lifespan	3
Annual Depreciation Costs	$231.67
Annual Net Profit	$768.33
Total Net Profit	$2,305.00
Return on Investment for Customer	332%

When Imara Tech fabricates a MCT, $500 is spent on local fabricators, suppliers, and sales agents. Through the creation of a new threshing agribusiness, an additional $3,000 of spending is stimulated in rural areas. Since 72.5% of Imara Tech customers use the MCT for a business, every dollar that Imara Tech invests in the production and sale of a MCT stimulates $4.35 of new rural economic activity. By spending $2.31M on production and sales of MCTs between 2020 and 2025, Imara Tech will stimulate $12.38M of economic activity in rural areas.

Unit Economic Impact: MCT

Data	Value
Imara Tech Total Costs (COGS+COS)	$500.00
Induced Income Generation	$3,000.00
Total Economic Stimulation per MCT	$3,500.00
Business Utilization Rate	73%
Multiplier Effect of Imara Tech Spending	4.35

Projected Economic Impact: MCT

Projections	2020	2021	2022	2023	2024	2025
Total MCT Sales	225	400.4	512	972	1080	1440
Imara Tech Spending	$112,500	$200,200	$256,000	$486,000	$540,000	$720,000
Net to Date	$112,500	$312,700	$568,700	$1,054,700	$1,594,700	$2,314,700
Induced Rural Spending	$489,375	$870,870	$1,113,600	$2,114,100	$2,349,000	$3,132,000
Net to Date	$489,375	$1,360,245	$2,473,845	$4,587,945	$6,936,945	$10,068,945
Total Economic Impact	$601,875	$1,071,070	$1,369,600	$2,600,100	$2,889,000	$3,852,000
Net to Date	$601,875	$1,672,945	$3,042,545	$5,642,645	$8,531,645	$12,383,645

Analysis: Mechanized Planter

Market Study of Mechanized Planter

Imara Tech is currently conducting R&D on a mechanized, engine-driven planter, which will be used a service business. Current prototypes are capable of planting 5 acres per day, suggesting that 150 acres can be planted over a 6-week period assuming a 5-day workweek. Thus the product impacts the same number of farms as the MCT: 50 small farms or 11.5 larger farms. With an estimated sales price of $1000 and lifespan of 5 years, Imara Tech expects to capture 2% of the market for planters by 2025.

Market Study: Planter

Unit	Small Farms	Other Farms	Nationally
Total Number of Farms	4,964,306	1,000,475	5,964,781
Total Number of Farms Without Mechanization	4,894,806	896,426	5,791,802
Farms Served per Planter	50	11.5	32
Total Number of Planters at Saturation	99,286	86,998	186,399
Total Number of Planters Needed for Saturation	97,896	77,950	180,994
Market Size: Total Value of Market	99,286,120	86,997,826	186,399,406
Market Size: Total Value of Unserved Market	97,896,120	77,950,087	180,993,813
Total Planter Sales 2020-2025			2,804
Total Market Penetration by 2025			2%
Total Market Share by 2025			2,523,600

Financial Analysis of Mechanized Planter

Imara Tech's planter is still undergoing product development and thus is not being sold in 2020. It is expected to be introduced to market in 2021 and will account for 19.9% of revenue generated by 2025.

Unit Economics: Planter

Data	Value
Revenue per Sale	$1,000.00
Cost of Goods Sold	$300.00
Gross Profit	$700.00
Gross Margin	70.00%
Cost of Sale	$70.00

Financial Projections: Planter

Projections	2020	2021	2022	2023	2024	2025
Total Planter Sales	0	56	192	540	864	1152
Total Imara Tech Revenue	$140,000	$356,678	$777,640	$1,890,540	$3,031,200	$5,214,600
Revenue from Planter Sales	$0	$50,400	$172,800	$486,000	$777,600	$1,036,800
Revenue from Planter Sales (%)	0.00%	14.13%	22.22%	25.71%	25.65%	19.88%

Economic Analysis of Mechanized Planter

Imara Tech's planter will be sold to customers who will use it as a business. Based on market research that found that farmers are willing to pay 20,000 TZS per acre for planting services, we estimate that a planter operator can earn $3.50 per hour net of fuel costs, ultimately earning $35 per day of operation. Assuming a 5 year equipment lifespan and a conservative estimate of 30 days of operation per year, each planter will create 1 seasonal agricultural job that will generate a 425% ROI.

Business Model: Planter

Data	Value
Income Earned per Acre	$9.00
Acres per Hour	0.5
Operating Costs per Hour	$1.00
Gross Profit per Hour	$3.50
Hours Used per Day	10
Days Used per Year	30
Annual Operating Income Earned from Planter	$1,050.00
Total CAPEX Cost	$1,000.00
Equipment Lifespan	5
Annual Depreciation Costs	$200.00
Annual Net Profit	$850.00
Total Net Profit	$4,250.00
Return on Investment for Customer	425%

When Imara Tech fabricates a planter, it is expected that $370 is spent on local fabricators, suppliers, and sales agents. Through the creation of a new planting agribusiness, an additional $5,250 of spending is stimulated in rural areas. Assuming that 72.5% of customers use the planter for business (same proportion as the MCT), every dollar that Imara Tech invests in the production and sale of a planter stimulates $10.30 of new rural economic activity. By spending $1.17M on production and sales of planters between 2020 and 2025, Imara Tech will stimulate $11.85M of economic activity in rural areas.

Unit Economic Impact: Planter

Data	Value
Imara Tech Total Costs (COGS+COS)	$370.00
Induced Income Generation	$5,250.00
Total Economic Stimulation per Planter	$5,620.00
Business Utilization Rate	72.50%
Multiplier Effect of Imara Tech Spending	10.3

Projected Economic Impact: Planter

Projections	2020	2021	2022	2023	2024	2025
Total Planter Sales	0	56	192	540	864	1152
Imara Tech Spending	$0	$23,520	$80,640	$226,800	$362,880	$483,840
Net to Date	$0	$23,520	$104,160	$330,960	$693,840	$1,177,680
Induced Rural Spending	$0	$213,150	$730,800	$2,055,375	$3,288,600	$4,384,800
Net to Date	$0	$213,150	$943,950	$2,999,325	$6,287,925	$10,672,725
Total Economic Impact	$0	$236,670	$811,440	$2,282,175	$3,651,480	$4,868,640
Net to Date	$0	$236,670	$1,048,110	$3,330,285	$6,981,765	$11,850,405

Analysis: Solar Milling Machine

Market Study of Solar Mill

Imara Tech is currently conducting R&D on a solar-powered milling machine, which is expected to begin initial pilots in 2021. Rather than selling the mills, Imara Tech will establish mills in off-grid areas and operate them as services. Based on data from the UN and other sources, it is expected that there are between 3M and 3.8M rural households without access to grid electricity at a community level. These farmers are expected to spend between $11 - $22 per year on milling services, suggesting the market for off-grid milling services is between $34M - $86M USD per year.

Market Study: Solar Mill

Unit	Upper Bound	Lower Bound
Rural Population	40,000,000	40,000,000
Average Household Size	4.8	4.8
Percentage of Farmers Growing Maize	90%	90%
Percentage of Farming Households in Rural Areas	100%	80%
Number of Rural Households Growing Maize	7,500,000	6,000,000
Percentage of Rural Communities with Electricity Access	0.493	0.493
Number of Rural Households Growing Maize without Community Electricity Access	3,802,500	3,042,000
Average Household Flour Consumption per Week (Kg)	10	5
Service Charge per kg of Maize	$0.04	$0.04
Service Charge per Household per Week	$0.43	$0.22
Rural Household Spend per Year for Maize Milling	$22.61	$11.30
Total Spend on Maize Milling Services by Rural Households without Community-level Electricity Annually	**$85,969,565.22**	**$34,387,826.09**
Projected Annual Revenue 2025	**$1,064,347.83**	**$1,064,347.83**
Market Capture	**1.2%**	**3.1%**

Financial Analysis of Solar Mill

Imara Tech's solar mill is still undergoing product development and thus is not being sold in 2020. It is expected to be introduced to market in 2021 and will account for 20.4% of revenue generated by 2025.

Unit Economics: Mill

Data	Value
Annual Revenue per Solar Mill	$6,260.87
Annual Cost of Goods Sold	$800.00
Annual Gross Profit	$5,460.87
Annual Gross Margin	87.22%
Annual SG&A	$1,200.00
Annual Net Profit	$4,260.87
Annual Net Margin	68%

Financial Projections: Solar Mill

Projections	2020	2021	2022	2023	2024	2025
Total New Mill Installations	0	0	10	30	70	170
Total Imara Tech Revenue	$140,000	$356,678	$777,640	$1,890,540	$3,031,200	$5,214,600
Revenue from Mill Operations	$0	$0	$62,609	$187,826	$438,261	$1,064,348
Revenue from Mill Operations (%)	0.00%	0.00%	8.05%	9.94%	14.46%	20.41%

Economic Analysis of Solar Mill

Imara Tech's solar mill will be owned by Imara Tech and operated as a service business. Each mill will employ one operator who will earn $4 per day for managing the mill. 480kg of flour is milled each day and 300 days of operation per year, each solar mill is expected to generate a 533% ROI over a 10-year period.

Business Model: Solar Mill

Data	Value
Grain Milled Per Hour	120
Hours Operated per Day	4
Days Operated per Year	300
Revenue per kg	$0.04
Revenue per Year	$6,260.87
Equipment Cost	$8,000.00
Equipment Lifespan in Years	10
Depreciation per Year (COGS)	$800.00
Operator Cost per Hour	$1.00
Operator Cost per Day	$4.00
Operator Cost per Year (SG&A)	$1,200.00
Annual Net Profit	$4,260.87
Total Net Profit	$42,608.70
Return on Investment	533%

When Imara Tech fabricates a solar mill, it is expected that $8000 is spent on local fabricators, suppliers, and sales agents. Through the creation of new milling sites, an additional $74,608 of spending on milling is stimulated in rural areas over the product lifetime, of which $12,000 is retained in the community as wages. Thus, every dollar that Imara Tech invests in the production and sale of a mill stimulates $9.30 of new rural economic activity. By spending $1.36M on production and sales of mills between 2022 and 2025, Imara Tech will stimulate $14.0M of economic activity.

Unit Economic Impact: Mill

Data	Value
Imara Tech Total Costs (CAPEX)	$8,000.00
Induced Spending (SG&A + Revenue)	$74,608.70
Total Economic Stimulation per Solar Mill	$82,608.70
Multiplier Effect of Imara Tech Spending	9.3

Projected Economic Impact: Mill

Projections	2020	2021	2022	2023	2024	2025
New Mill Installations	0	0	10	20	40	100
Imara Tech Spending	$0	$0	$80,000	$160,000	$320,000	$800,000
Net to Date	$0	$0	$80,000	$240,000	$560,000	$1,360,000
Induced Rural Spending	$0	$0	$746,087	$1,492,174	$2,984,348	$7,460,870
Net to Date	$0	$0	$746,087	$2,238,261	$5,222,609	$12,683,478
Total Economic Impact	$0	$0	$826,087	$1,652,174	$3,304,348	$8,260,870

Net to Date	$0	$0	$826,087	$2,478,261	$5,782,609	$14,043,478

Analysis: Solar Oil Pressing Machine

Market Study of Solar Oil Press

Imara Tech is currently conducting R&D on a solar-powered oil pressing machine, which is expected to begin initial pilots in 2021. Rather than selling the presses, Imara Tech will establish oil extraction businesses in off-grid areas and operate them as services. It is estimated that there are over 2 million smallholder farms producing sunflower in Tanzania. These farms are estimated to produce between 400-1600 kg of sunflower each year, for which the extraction services can be valued between $25 - $95, suggesting a market for off-grid oil extraction services between $25 and $138 annually.

Market Study: Solar Oil Press

Unit	Upper Bound	Lower Bound
Number of Smallholder Farmers Growing Sunflower in Tanzania	4,000,000	4,000,000
Percentage of Rural Communities with Electricity Access	0	0
Number of Smallholder Farmers Growing Sunflower without Electricity Access	1,972,000	1,972,000
Average plot of land for growing sunflower in acres (acres)	3	1
Average annual yield in bags of sunflower per acre (kg)	7	6
Average annual yield in kilograms of seeds per bag (kg)	70	65
Total annual yield of sunflower seeds in off-grid areas (kg)	2,898,840,000	769,080,000
Service Charge per kg of seed	$0.07	$0.07
Total Market Value for Off-grid Sunflower Oil Pressing Services	**$189,054,782.61**	**$50,157,391.30**
Projected Annual Revenue 2025	**$898,043.48**	**$898,043.48**
Market Capture	**0.5%**	**1.8%**

Financial Analysis of Solar Oil Press

Imara Tech's solar oil press is still undergoing product development and thus is not being sold in 2020. It is expected to be introduced to market in 2021 and will account for 17.2% of revenue by 2025.

Unit Economics: Solar Oil Press

Data	Value
Annual Revenue per Solar Oil Press	$5,282.61
Annual Cost of Goods Sold	$700.00
Annual Gross Profit	$4,582.61
Annual Gross Margin	86.75%
Annual SG&A	$900.00
Annual Net Profit	$3,682.61
Annual Net Margin	70%

Financial Projections: Solar Oil Press

Projections	2020	2021	2022	2023	2024	2025
Total New Press Installations	0	0	10	30	70	170
Total Imara Tech Revenue	$140,000	$356,678	$777,640	$1,890,540	$3,031,200	$5,214,600
Revenue from Press Operations	$0	$0	$52,826	$158,478	$369,783	$898,043
Revenue from Press Operations (%)	0.00%	0.00%	6.79%	8.38%	12.20%	17.22%

Economic Analysis of Solar Oil Press

Imara Tech's solar oil press will be owned by Imara Tech and operated as a service business. Each press will employ one operator who will earn $10 per day. Assuming 900kg of seed is pressed each day over 90 days per year, each solar press is expected to generate a 448% ROI over a 10-year period.

Business Model: Solar Oil Press

Data	Value
Seeds Pressed per Hour	140
Seedcake Produced per Hour	90
Hours Operated per Day	10
Days Operated per Year	90
Revenue per kg	$0.07
Revenue per Year	$5,282.61
Equipment Cost	$8,000.00
Equipment Lifespan in Years	10
Depreciation per Year (COGS)	$800.00
Operator Cost per Hour	$1.00
Operator Cost per Day	$10.00
Operator Cost per Year (SG&A)	$900.00
Annual Net Profit	$3,582.61
Total Net Profit	$35,826.09
Return on Investment	448%

When Imara Tech fabricates a solar press, it is expected that $8,000 is spent on local fabricators and suppliers. Through the creation of new oil extraction sites, an additional $61,826 of spending on oil extraction is stimulated in rural areas over the press lifetime. Thus, every dollar that Imara Tech invests in the production and operation of a press stimulates $7.70 of new rural economic activity. By spending $1.36M on presses between 2022 and 2025, Imara Tech will stimulate $11.8M of economic activity.

Unit Economic Impact: Solar Oil Press

Data	Value
Imara Tech Total Costs (CAPEX)	$8,000.00
Induced Spending (SG&A + Revenue)	$61,826.09
Total Economic Stimulation per Solar Oil Press	$69,826.09
Multiplier Effect of Imara Tech Spending	7.7

Projected Economic Impact: Solar Oil Press

Projections	2020	2021	2022	2023	2024	2025
Total Press Installations	0	0	10	20	40	100
Imara Tech Spending	$0	$0	$80,000	$160,000	$320,000	$800,000
Net to Date	$0	$0	$80,000	$240,000	$560,000	$1,360,000
Induced Rural Spending	$0	$0	$618,261	$1,236,522	$2,473,043	$6,182,609
Net to Date	$0	$0	$618,261	$1,854,783	$4,327,826	$10,510,435
Total Economic Impact	$0	$0	$698,261	$1,396,522	$2,793,043	$6,982,609
Net to Date	$0	$0	$698,261	$2,094,783	$4,887,826	$11,870,435

It is expected that with expansion of the oil pressing services to other oil crops such as sesame and avocado, Imara Tech will be able to increase its market penetration and economic impact beyond projections given in the sections above.

Analysis: Solar Peanut Shelling Machine

Market Study of Solar Peanut Shelling Machine

Imara Tech is currently conducting R&D on a solar-powered peanut shelling machine, which is expected to begin initial pilots in 2021. Rather than selling the shellers, Imara Tech will establish shelling businesses in off-grid areas and operate them as services. It is estimated that there are 1.8M mt of peanuts produced in Tanzania annually, the majority of which are produced by smallholder farms. We estimate there is a market of $8M - $21M annually to provide shelling services to these smallholders.

Market Study: Solar Peanut Sheller

Unit	Upper Bound	Lower Bound
Production of groundnuts per year	1,800,000,000	1,800,000,000
Percentage of groundnuts produced by smallholders	90%	80%
Amount of groundnuts produced by smallholders	1,620,000,000	1,440,000,000
Percentage of groundnuts Growers with Electricity Access	49%	49%
Number of Groundnuts Produced in Off-grid areas (kg)	798,660,000	709,920,000
Weight of groundnuts in bag	50	40
Shelling Service cost per bag	$1.30	$0.43
Total Market Value for Off-grid Peanut Shelling	**$20,834,609**	**$7,716,522**
Projected Annual Revenue 2025	**$638,608.70**	**$638,608.70**
Market Capture	**3.1%**	**8.3%**

Financial Analysis of Solar Peanut Sheller

Imara Tech's solar peanut sheller is still undergoing product development and thus is not being sold in 2020. It is expected to be introduced to market in 2022 and will account for 12.25% of revenue by 2025.

Unit Economics: Solar Peanut Sheller

Data	Value
Annual Revenue per Solar Peanut Sheller	$3,756.52
Annual Cost of Goods Sold	$300.00
Annual Gross Profit	$3,456.52
Annual Gross Margin	92.01%
Annual SG&A	$720.00
Annual Net Profit	$2,736.52
Annual Net Margin	73%

Financial Projections: Solar Peanut Sheller

Projections	2020	2021	2022	2023	2024	2025
Total Solar Peanut Sheller Installations	0	0	10	30	70	170
Total Imara Tech Revenue	$140,000	$356,678	$777,640	$1,890,540	$3,031,200	$5,214,600
Revenue from Solar Peanut Sheller Installations	$0	$0	$37,565	$112,696	$262,957	$638,609
Revenue from Solar Peanut Sheller Installations (%)	0.00%	0.00%	4.83%	5.96%	8.67%	12.25%

Economic Analysis of Solar Shelling Machine

Imara Tech's solar peanut shelling machine will be owned by Imara Tech and operated as a service business. Each shelling machine will employ one operator who will earn $8 per day for managing the sheller. Assuming 1600 kg of peanuts are shelled per day, the shelling machine is expected to generate $2,736 per year in net profit and result in a 912% ROI over its lifetime.

Business Model: Solar Peanut Sheller

Data	Value
Peanuts Shelled per Hour	200
Hours Operated per Day	8
Days Operated per Year	90
Revenue per kg	$0.03
Revenue per Year	$3,756.52
Equipment Cost	$3,000.00
Equipment Lifespan in Years	10
Depreciation per Year (COGS)	$300.00
Operator Cost per Hour	$1.00
Operator Cost per Day	$8.00
Operator Cost per Year (SG&A)	$720.00
Annual Net Profit	$2,736.52
Total Net Profit	$27,365.22
Return on Investment	912%

When Imara Tech fabricates a solar shelling machine, it is expected that $3,300 is spent on local fabricators and suppliers. Through the creation of a new shelling machines, an additional $44,765 of spending on shelling is stimulated in rural areas over the product lifetime. Thus, every dollar that Imara Tech invests in the production and sale of a sheller stimulates $14.90 of new rural economic activity. By spending $510,000 on production and sales of shellers between 2022 and 2025, Imara Tech will stimulate $8.12M of economic activity.

Unit Economic Impact: Solar Peanut Sheller

Data	Value
Imara Tech Total Costs (CAPEX)	$3,000.00
Induced Spending (SG&A + Revenue)	$44,765.22
Total Economic Stimulation per Solar Peanut Sheller	$47,765.22
Multiplier Effect of Imara Tech Spending	14.9

Projected Economic Impact: Solar Peanut Sheller

Projections	2020	2021	2022	2023	2024	2025
New Solar Peanut Sheller Installations	0	0	10	20	40	100
Imara Tech Spending	$0	$0	$30,000	$60,000	$120,000	$300,000
Net to Date	$0	$0	$30,000	$90,000	$210,000	$510,000
Induced Rural Spending	$0	$0	$447,652	$895,304	$1,790,609	$4,476,522
Net to Date	$0	$0	$447,652	$1,342,957	$3,133,565	$7,610,087
Total Economic Impact	$0	$0	$477,652	$955,304	$1,910,609	$4,776,522
Net to Date	$0	$0	$477,652	$1,432,957	$3,343,565	$8,120,087

Environmental Impact Analysis

Environmental Impact Assessment

Imara Tech's operations will have positive environmental impacts. Through distribution of mechanized agricultural equipment such as mechanized planters that are designed in line with conservation agriculture principles (minimal soil disturbance), farmers will improve their utilization of land and its health. Through establishment of solar-powered agro-processing businesses, Imara Tech will enable new agribusinesses to be powered with clean energy.

Imara Tech's environmental impact risks are related primarily to the production processes and disposal of materials. These risks are given below along with risk mitigation strategies.

Risk	**Environmental Impact**	**Likelihood if Unaddressed**	**Mitigation Strategy**
Improper disposal of metal waste	Medium	High	Imara Tech currently collects all scrap material and provides it to local organizations that deal with metal recycling
Improper disposal of other production material	Medium	High	Imara tech minimizes the use of caustic or hazardous materials in its production processes. For materials such as paint thinner and others, we ensure proper storage while materials are in use. After being used, all residuals are properly disposed of.
Improper disposal of batteries	High	High	Before 2022, Imara Tech will develop an end-of-life strategy for depleted batteries and arrange for their proper recycling or disposal.

Employment Generation

Projected Employment Generation

Employment Generation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Total Full-Time Positions	11	30	31	45	45	58
Skilled	11	28	29	42	42	54
Unskilled	0	2	2	3	3	4
Total FTEs from Full-Time Positions	**11**	**30**	**31**	**45**	**45**	**58**
Total Part-Time Positions	0	0	30	90	210	510
Mill Operators: FTE Equivalents	0	0	6	18	42	102
Press Operators: FTE Equivalents	0	0	5	14	32	77
Sheller Operators: FTE Equivalents	0	0	4	11	25	61
Total FTE Equivalents from Part-Time Positions	**0**	**0**	**14**	**42**	**99**	**240**
Total Contracted Positions	45	92	110	196	205	274
Manufacturing: FTE Equivalents	14	24	31	58	65	87
Sales: FTE Equivalents	4	9	11	18	18	24
Total FTE Equivalents from Contracted Positions	**18**	**33**	**41**	**76**	**83**	**111**
Total FTE Equivalents from All Positions	**29**	**63**	**87**	**164**	**227**	**408**
Running Total Agribusinesses Enabled	163	453	825	1529	2312	3356
Total Active Agribusinesses Enabled	**163**	**453**	**825**	**1366**	**1696**	**1915**

Full-Time Positions

Imara Tech will directly employ staff through its workshop and sales operations. Each workshop that Imara Tech opens employs an average of 13 people, of which most will be skilled positions and 2/3 of which will be for skilled laborers and technicians. By 2025, Imara Tech is projected to have 54 full-time employees (FTEs) directly employed.

Full-Time Positions	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Skilled Jobs	11	28	29	42	42	54
Professionals	7	20	21	30	30	38
Laborers	4	8	8	12	12	16
Unskilled Jobs	0	2	2	3	3	4
Total FTEs	11	30	31	45	45	58

Seasonal and Part-Time Positions

Imara Tech will employ seasonal and part-time staff in rural areas to manage its solar-powered agro-processing equipment as services for surrounding communities. Imara Tech projects to have 510 staff operating its solar-powered equipment by 2025. Based on a 2,000 hour working year, these 510 part-time positions are the equivalent to 240 FTEs.

Seasonal/Part-Time Positions	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Mill Operators	0	0	10	30	70	170
FTE Equivalent	0	0	6	18	42	102
Press Operators	0	0	10	30	70	170
FTE Equivalent	0	0	4.5	13.5	31.5	76.5
Sheller Operators	0	0	10	30	70	170
FTE Equivalent	0	0	4	11	25	61
Total Seasonal/Part-Time Positions	**0**	**0**	**30**	**90**	**210**	**510**
Total FTE Equivalents from Seasonal/Part-Time Positions	**0**	**0**	**14**	**42**	**99**	**240**

Contracted Positions

Imara Tech will also create indirect employment through its operations. On the production side, Imara Tech will improve the livelihoods of skilled metalworkers through contracting. By 2025, Imara Tech's production processes will require 130 full-time contractors to fabricate MCTs and planters, an equivalent of having 87 full-time employees on staff year-round. On the sales side, Imara Tech will also improve the livelihoods of sales agents, who will earn commission from Imara Tech sales: Imara Tech currently has 25 agents and will continue to grow this network to reach 144 agents by 2025, the equivalent of 24 full-time staff.

Contracted Positions	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Manufacturing: Seasonal Contractors Required	20	36	46	88	97	130
FTE Equivalent	14	24	31	58	65	87
Sales: Total Number of Agents	25	56	64	108	108	144
FTE Equivalent	4	9	11	18	18	24
Total Contracted Workers	**45**	**92**	**110**	**196**	**205**	**274**
FTE Equivalent	**18**	**33**	**41**	**76**	**83**	**111**

Agribusinesses Enabled

Imara Tech will create employment through sales of its products. Currently, 72.5% of Imara Tech customers use an Imara Tech product to earn income, and each of these operators is expected to earn over $1000 each year. Products such as the MCT and the mechanized planter will create new seasonal agribusiness jobs in rural areas, although these workers will be self-employed. Through sales of 4,629 MCTs between 2020-2025, Imara Tech is expected to enable a total of 1,915 agribusinesses.

Product Jobs	**2,020**	**2,021**	**2,022**	**2,023**	**2,024**	**2,025**
MCT Sales	225	400	512	972	1,080	1,440
New Agribusinesses	163	290	371	705	783	1,044
Running Total Agribusinesses Enabled	**163**	**453**	**825**	**1,529**	**2,312**	**3,356**
Total Active Agribusinesses Enabled	**163**	**453**	**825**	**1,366**	**1,696**	**1,915**