



Twende Social Innovation Center

# 2021

Annual Report

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# OUR MISSION

Empower people to design and make their own technologies to solve their own problems.



# 2021 AT A GLANCE



**80**

youth reached through  
Creative Capacity  
Building Workshops

**100**

youth reached through  
Built-It Workshops

**300**

youth reached through  
STEM Outreach



**4**

technologies reached  
market testing phase

**22**

technologies developed

expanded geographical  
footprint to 3 regions

**218**

visitors hosted

**20**

local/ international  
university students co-  
created 4 technologies with  
a local community through  
Jamii Tech Program



# 2021 HIGHLIGHTS

**January** - Kickstarted Our STEM Outreach to public schools

**February** - A series of Build-It workshops in public schools

**March** - Holiday Build-It Camp in partnership with Senda Success

**April** - Girls only Creative Capacity Building with The Girls Foundation of Tanzania

**May** - Successfully Organized and Co-Hosted Arusha Innovation Week

**June** - Holiday Build-It workshops with private school students

**July** - Showcased Twende and our Technologies through our Innovators at SabaSaba

**August** - Launched our Satellite Center in Kilimanjari in partnership with Orkolili Secondary & Vocational School

**August** - Hosted 20 Youths to co-create technologies through the Jamii Tech Incubation Program

**September** - Virtual Youth Day Exposition planning and co-hosting with the Jakaya Mrisho Kikwete Foundation

**October** - Twende won the AfriLabs Capacity Building Award & Grant in partnership with Kumasi Hive in Abuja, Nigeria

**November** - Hosted the first Twende Farmers' Week Event with support from Anza, Ubuntu Hub, SIDO Arusha and funded by Segal Family Foundation and the Jakaya Mrisho Kikwete Foundation

**December** - Giving season fundraising campaign.& Annual Planning

# 2021 IN REVIEW

At Twende, we believe in co-creation through collaboration, and 2021 has been a great year for this. From building flashlights to creating a plastic shredding machine, and from one makerspace to two, we have seen how far we can go when we work together. Our partnerships have been stronger than ever, and we've achieved a lot together, including hosting our first-ever Farmers Week event, launching a satellite center in Kilimanjaro, and winning the AfriLabs Capacity Building grant.

Despite the challenges we faced due to COVID-19, which included the absence of international students in our programs, we were able to meet and exceed our expectations. We had a record year for Twende technologies, with a high level of successful technologies from the incubation program and a strong improvement in product finalization. We have four associated businesses that owe their origins at least partly, to Twende and they have received valuable financial help from the Jakaya Mrisho Kikwete Foundation. We aspire to spin off more businesses that disseminate technologies developed at Twende.

Our team of dreamers, directors, designers, and doers has made it possible for us to achieve our mission of empowering people to design and make their own technologies to solve community challenges. We also want to thank our volunteers and interns, as well as our donors and implementing partners, for their support. We hope to continue empowering communities through innovation and technology.

Sincere thanks,

**John Rexford Nzira**  
*Executive Director*





# OUR PROGRAMS

## Creative Capacity Building (CCB) Workshops

The Creative Capacity Building Workshop is Twende's flagship program, adapted from MIT. Over the course of five days, participants are introduced to the design cycle of build-test-iterate, and they develop practical skills through design challenges and the opportunity to build existing technologies with hand tools. They then use these skills to identify real-life problems, brainstorm solutions, and design and build prototypes with guidance from their Twende trainer.

We have been able to run four of these workshops with various communities in the Arusha, Manyara, and Kilimanjaro regions. We have worked with 143 participants, 52 of whom were female and 91 male. The 23 technologies developed covered a wide range of sectors.



*"I have had the pleasure of collaborating with Twende for the past five years and it has been an incredibly rewarding experience. Not only have my girls thoroughly enjoyed their time at Twende, but the supportive and welcoming environment has made it easy for them to focus on designing and creating their projects. In fact, The Girls Foundation of Tanzania is now using four technologies that were developed by our girls at Twende. I am extremely grateful for all that Twende has done and I am confident that they will continue to do great work in the future."*

**Estahappy Mariki**  
**Executive Director, The Girls Foundation of Tanzania**





## STEM Outreach Programs

Twende reaches out to schools and other institutions to introduce young people to the idea of creating technologies. Some of the participants sign up for programs held in our workshop. We also run outreach workshops to spark the spirit of innovation and provide a platform for students to put into practice what they learn in school theoretically and find interest in Science, Technology, Engineering and Mathematics (STEM).

During these outreach workshops, students typically do a small electronic activity related to what they learn in class, such as making circuits to light up an LED bulb. The results are summarized in the table below..



*“We are fortunate to have found Twende, an innovation centre that has helped our students gain a deeper understanding of the practical applications of what they learn in class. As a result, they have come to enjoy science subjects more than they did previously.”*

**Elisha Mollel**  
*Teacher, Likamba Integrity School*



## Build-It Workshops

The Build It Workshop is an educational program that teaches practical skills to students by guiding them to build a specific product with locally sourced materials. This hands-on workshop encourages creativity, problem-solving, and the application of scientific concepts learned in school, while inspiring students to pursue further education in STEM and innovate for their local communities. We normally solicit participants through outreach programs in schools, but we also worked with partner organizations to solicit participants. The results were amazing, and we worked with schools and organizations in various regions.



*"I have received incredible support from Twende, which has allowed me to make significant progress in a short time. By building a washing machine at their workshop and receiving guidance on presenting my innovation, I have won several prizes and even had the opportunity to compete nationally. This has been a major success for me thanks to Twende's support."*

**Jumah  
Build-It Alumni**



## Jamii Tech Incubation Program

The Jamii Tech Incubation Program is a design program that brings together teams of Tanzanian community partners, young Tanzanians, and international design and engineering students to collaborate on solutions to problems identified by the community partners.

The program helps build confidence and competence in the design process and creative problem-solving, as well as encouraging local production and cross-cultural collaboration. This year, we invited students from four Tanzanian colleges and universities to team up with the local community due to travel restrictions.

The teams developed five technologies, including a maize peeler and thresher, a plastic shredder, a palm oil extractor, a potatoes peeler and cutter, and a biogas-powered iron box (which was not incubated in the program but will be incubated in the future).

Four of the technologies were included in the incubation program run by the Digital Opportunity Trust (DOT) Tanzania, which aims to equip them with business skills using digital tools. The four technologies that made it to the final incubation process are the plastic shredder, maize peeler and thresher, potatoes peeler and cutter, and palm oil extractor.



*"I always had a lot of innovative ideas, but I never had the chance to pursue them because I was constantly discouraged by those around me, including my schools. However, when I found Twende, everything changed. They supported and encouraged me, and I was finally able to bring my ideas to life. With the resources and support they provide, I've been able to see my potential grow rapidly. Thank you, Twende, for helping me discover my true potential"*

**Luqman Yusuph Juma**  
**Jamii Tech 2021 Alumni/ Innovator**





## Makerspace visits

We were delighted to host 218 visits (both local and international) to our workshop during this budget year. Visitors came to learn more about Twende, take a tour, express interest in our projects, or simply say hello. Our makerspace has opened many doors for these interactions.

# IMPACT STORIES



We are proud of the progress that our alumni have made in running and growing their businesses, despite facing challenges. Based on the evaluation conducted this year, here are the findings:

**Imara Tech** has launched a new product, the Chaff Cutter, which is gaining popularity among animal keepers in and around Arusha. This machine processes all types of animal feed by cutting grass into small pieces and grinding hard materials like maize cobs. In addition to the Chaff Cutter, Imara Tech's first product, the Multicrop Thresher, has been a success, with the company selling a total of 132 machines - 120 Multicrop threshers and 12 Chaff Cutters. The company has also hired 27 permanent employees and 30 satellite artisans, and has 31 agro shops showcasing their products.

**Green Venture** is a company that converts plastic waste into building materials, specifically plastic lumber. They have seen significant growth due to the demand for their products and are now producing at a large scale, working in shifts around the clock. The company's plastic lumber machine has the capacity to produce 50 lumbers in a day. Green Venture currently has six permanent employees and more than 40 plastic collectors. They collect up to 3 tons of plastic per week, and their biggest customers are tourist companies, which account for 67% of their orders.

**Kyaro Assistive Tech** is a non-governmental organization (NGO) that provides assistive devices to people with disabilities. In the current fiscal year, they have built and supplied 48 devices to various communities in Tanzania. They manufacture multipurpose wheelchairs and other assistive devices, including standard wheelchairs and standing frames.

We are proud that they have been recognized by various institutions in Tanzania and abroad, and have partnered with **Segal Family Foundation** as their funder to increase their impact.

**Avomeru Group Limited** is a company that processes avocados to produce avocado oil. It has grown to operate in three locations, including Kenya and Kagera, Tanzania. The company has hired 200 women to process avocados and 45 other employees to operate the machines. Avomeru is now able to produce up to three times a day from all its branches.

**Taifa Innovations**, a company that focuses on creating and supplying technologies to solve community challenges, launched two new products in 2021: a disabled driving mechanism that allows people with no legs to drive, and a peanut butter maker. In addition to these successes, the company made and sold 30 car racing games to entrepreneurs, and built over 300 tippy taps for distribution to schools, hospitals, and marketplaces.



# EVENTS

**Arusha Innovation week 2021**

**Sabasaba exhibition 2021**

**Farmer's week**

**Arusha Innovation summit**



## Arusha Innovation week

Twende hosted the Arusha Innovation Week in partnership with Anza Entrepreneurs and Obuntu Hub (now Westerwelle Startup Haus Arusha). The event focused on innovation for a resilient, inclusive digital economy and provided us with the opportunity to connect with innovators and entrepreneurs in Arusha and learn more about their work. We also had the chance to network with various players in the ecosystem and discuss the role of innovation in driving progress.

**4**  
technologies  
exhibited

**3**  
panel  
discussions

**500+**  
attendees



**500**  
visitors

**5**  
innovators showcased  
their tech alongside  
Twende

## The Dar es Salaam International Trade Fair (DITF)

This year, we showcased four Twende innovators at the Dar es Salaam International Trade Fair (DITF) made possible through our partnership with the Commission of Science & Technology (COSTECH).

Technologies showcased by the innovators included a multipurpose wheelchair, cereals winnower, bar soap cutter, and fertilizer applicator. The multipurpose wheelchair was developed by Kyaro Assistive Tech and received a lot of interest from potential buyers and beneficiaries who were able to learn about its existence. The cereals winnower was well-suited for farming regions and had the opportunity to receive potential advice from experienced agricultural engineers. The bar soap cutter, developed by Magreth, was popular among entrepreneurs in Dar es Salaam. She had the opportunity to educate visitors how to use the machine while also sharing her business experiences. The fertilizer applicator, developed by Lilian, was also a popular innovation among visitors. She was able to sell all of her stock and registered many potential orders.

Twende also participated in the exhibition, showcasing its programs and reaching over 500 visitors who expressed interest in the organization's programs.







## Farmers Week

This year we held a "Farmers Week" event to showcase agricultural innovations in place of the annual state-sponsored agricultural show, which was canceled due to the pandemic. The event, funded by Segal Family Foundation and Jakaya Mrisho Kikwete Foundation and co-organized by Ubuntu Hub (now WSHA), Anza Entrepreneurs, and SIDO-Arusha, featured an exhibition of innovations, panel discussions, and farm classes. The closing ceremony was led by the Jakaya Mrisho Kikwete Foundation, and included the presentation of awards to innovators. The event was successful with a future one planned.



**8**  
technologies  
exhibited



## Arusha Innovation Summit

Five Twende innovators participated in the Arusha Innovation Summit, an annual event that promotes innovation and creativity.

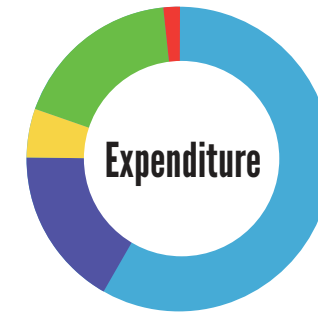
The innovators' projects competed as part of the Business Incubation Umbrella, which supports grassroots innovative business ideas. A maize peeler and thresher, a plastic shredder, a potato peeler and cutter, a palm oil extractor, and a solar-powered washing machine. The washing machine won first place in the young innovators category, while the plastic shredder took second place among eight competitors in the social/business category.

**5**  
Twende  
Innovators

**5**  
technologies  
exhibited



# FINANCIALS



**Earned Revenue**

1.1%  
\$629.82

**Individual Donations**

12.6%  
\$7,012

**Grants**

86.3%  
\$48,183

**TOTAL**

\$55,825

**Establishment Costs**

1.7%  
\$1,002.72

**Management & Administration**

18%  
\$10,564.71

**Marketing**

5%  
\$2,947.59

**Staff Costs**

17%  
\$10,006.87

**Program Costs**

58.2%  
\$34,210

**TOTAL**

\$58,732.54



# COLLABORATIONS

Our success in running Twende programs has been made possible through our partners and collaborators and we are grateful for the support.

### **Funding Partners**

Segal Family Foundation  
[www.segalfamilyfoundation.org](http://www.segalfamilyfoundation.org)

Southern Africa Innovation Support  
[www.saisprogramme.org](http://www.saisprogramme.org)

Jakaya Mrisho Kikwete Foundation  
[www.jmkfoundation.org](http://www.jmkfoundation.org)

GlobalGiving  
[www.globalgiving.org](http://www.globalgiving.org)

### **Membership**

AfriLabs  
[www.afrilabs.com](http://www.afrilabs.com)

IDIN Southern Africa Consortium  
[www.facebook.com/idinsadc](http://www.facebook.com/idinsadc)

Africa Makerspace Network  
[africamakerspace.net](http://africamakerspace.net)

### **Mission Partners**

Ashinaga  
[www.ashinaga.org/en](http://www.ashinaga.org/en)

Kumasi Hive  
[kumasihive.com](http://kumasihive.com)

Westerwelle Startup Haus Arusha  
[westerwelle-foundation.com/locations/wsh-arusha](http://westerwelle-foundation.com/locations/wsh-arusha)

Australian Volunteers International  
[www.australianvolunteers.com](http://www.australianvolunteers.com)

Commission of Science and Technology  
[www.costech.or.tz](http://www.costech.or.tz)

Senda Success

The Girls Foundation of Tanzania(TGFT)  
[www.girlsfoundationoftanzania.org](http://www.girlsfoundationoftanzania.org)

The School of St Jude  
[www.schoolofstjude.org](http://www.schoolofstjude.org)

SIDO-Arusha  
[www.sido.go.tz](http://www.sido.go.tz)

Babson College  
[www.babson.edu/](http://www.babson.edu/)

Anza Entrepreneurs



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