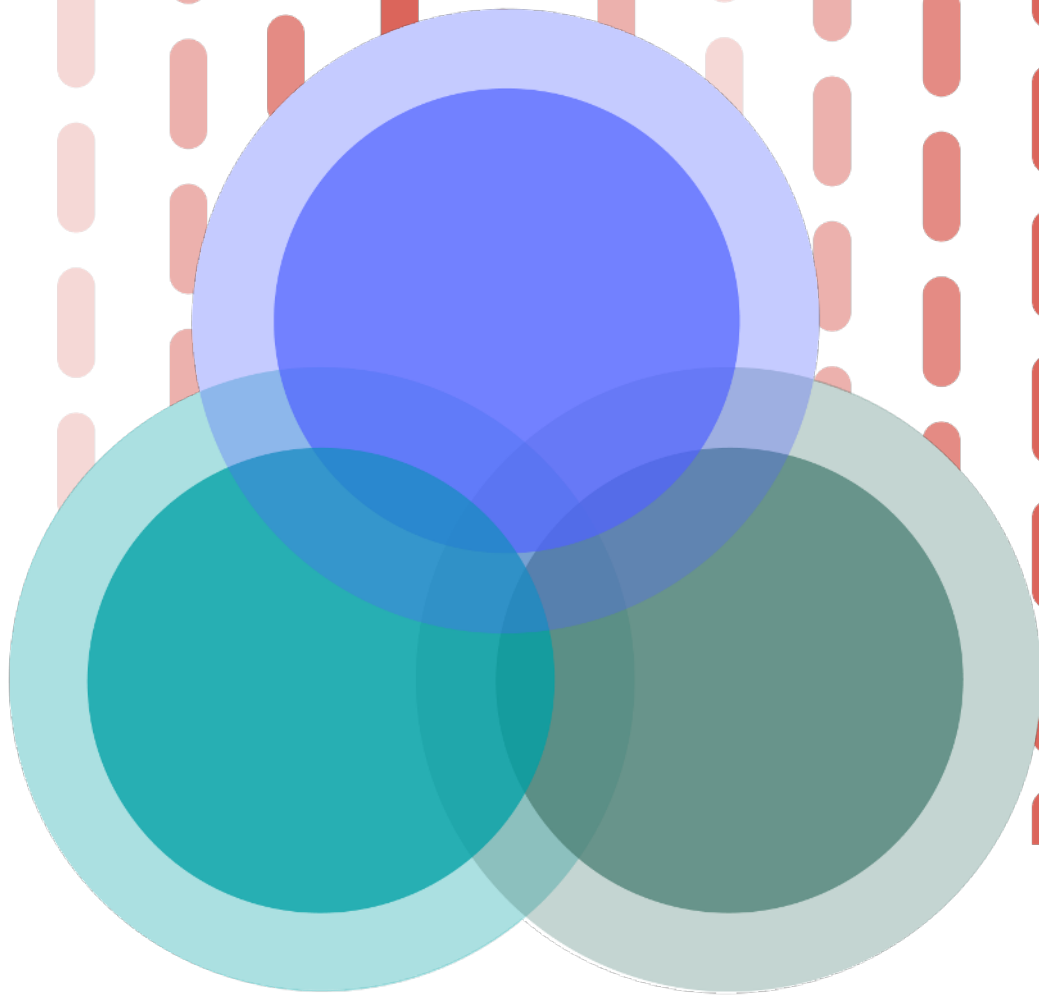




Finding Keys to Scaling in the African Climate Tech Innovation Landscape: Exploring Logistics, Circular Economy and Marketplace Models

ABOUT THE AUTHORS

This research was produced in collaboration with Hangyul Song and Clara Sarangé from [Briter Bridges](#). **Briter Bridges** is a fast-growing market intelligence and research firm focused on emerging economies. Briter has built the largest collection of visual publications on Africa and underserved markets and regularly provides data and insights to corporates, development finance institutions, governments, and investors. Briter's proprietary business data platform, Intelligence, is regularly used by thousands of public and private organisations ranging from the World Bank to Amazon and governments.

Katapult Africa, in collaboration and with support from the **UK-funded RISA Fund**, is furthering our scope of activities, drawing on research to further inform our investment and acceleration strategies, and engage and build the innovation ecosystem. Working across RISA sectors of innovation, climate and agriculture, this initiative will further support our tailoring of the Katapult model to Africa, and align with RISA Fund objectives of Innovation system strengthening (ATIP), and strengthening synergies between research and innovation systems (SRIA and ATIP). Learn more about Katapult Africa, [here](#).

Disclaimer: This document is an output from a project funded with UK aid from the UK government for the benefit of developing countries. However, the views expressed and information contained in it is not necessarily those of, or endorsed by the UK government, which can accept no responsibility for such views or information or for any reliance placed on them.



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Fair Carbon is a 2B digital MRV architecture for the carbon trading supply chain in emerging markets.



InspiraFarms Cooling designs, develops, installs, services, and finances precooling and cold chain technology for supply chains in Africa and other emerging markets.



Kenya Climate Innovation Center (KCIC) offers incubation, capacity building and financing options SME business ventures and Kenyan entrepreneurs address the challenges of climate change.



Ole Blu is a bluetech company increasing traceability in utilising seaweed for soil generation. TECA fellow Anga Mbeyiya founded the company.

INTRODUCTION

Out of 20 countries worldwide that are the most vulnerable to climate change, 16 of them are in Africa. Faced with global climate change's increasing environmental, economic, and societal impacts, public and private agendas in Africa are increasingly directed towards industry innovation to drive climate adaption, resilience and mitigation. Tech-enabled climate solutions, or "climatetech," have helped communities across Africa build climate resilience by adopting more drought-resistant inputs, incorporate climate adaptation practices such as electric transport services, and increase climate mitigation efforts by widely disseminating renewable energy. Many climatetech solutions can address resilience, adaptation and mitigation simultaneously and can maximise their impact by reaching a wide range of populations.

This climatetech space addressing climate resilience, adaption, and mitigation represents a \$2.8 trillion investment opportunity. Not only that, capital flow into climatetech innovations is one of the key ingredients for these solutions to scale and reach a broader user base. Katapult Africa contributes to improving Africa's climate adaptation resilience by investing in a portfolio of companies addressing Africa's food and climate system challenges.

In an effort to stay informed about the dynamic innovation ecosystem and to share these to inform discussion and strategies with key stakeholders, Katapult Africa has conducted research to identify key trends in the early-stage climate technology investment landscape. Katapult Africa partnered with Briter Bridges to create a database of over 300 startups that have raised funding in the climatetech space. The database merges Katapult Africa's 2023 application data with Briter Intelligence data on African startups with publicly available funding information.

The research focused on three verticals - **logistics, circular economy, and marketplaces** - areas in which Katapult Africa sees an increased number of startups emerging. Through an in-depth quantitative and qualitative analysis of these verticals, Katapult Africa explores how these growing verticals interlink to deliver sustainable food production, transformative and inclusive services, and efficient supply chain and infrastructure services that can ultimately create an impact on climate sustainability and poverty reduction. This report will share common features identified across three verticals as well as unique findings of each vertical.

KEY FINDINGS

- 1. Increasing market linkages through technological innovation is a key enabler of inclusive growth.** The common ingredient of impact across logistics, circular economy, and marketplaces verticals is innovations facilitating transparent and convenient transactions. This reduces costs and improves the quality of products and services to a bigger population.
- 2. The logistics vertical is building investment momentum.** Successful logistics companies are scaling by bundling services across the logistics value chain, from warehousing to distribution and delivery, solving market access challenges for farmers and value chain actors alike, and reducing food waste in particular.
- 3. B2B commerce product is the most funded in the logistics vertical.** A contributing factor is that B2B commerce startups offer a variety of products catering to services across the logistics supply chain. The current main driver in B2B commerce is the FMCG market segment.
- 4. The circular economy vertical needs more proving.** Models like insect protein and plastic recycling are gaining traction but they will need to prove their scalability by focusing on gaps in the value chain.
- 5. Circular economy startups should build partnerships for business sustainability and value creation.** Working closely with corporations in the sector can improve access to distribution channels and find product market fit. Government partnerships can lead to B2G models and high-impact populations.
- 6. B2B agriculture marketplaces dominate the climate-relevant marketplace vertical.** Agriculture marketplace solutions should work with aggregators to diversify their consumer base.
- 7. More climate-focused marketplace products - including carbon credit marketplaces - are still nascent.** They will need to focus on improving supply-side traceability to capture the demand in the market.

ECOSYSTEM MAPPING

Large African economic hubs - Kenya, South Africa, and Nigeria - are leaders in climate tech funding. The map of the top-funded companies in logistics, circular economy, and marketplaces shows that many top-funded companies are concentrated in Eastern and Southern Africa, led by Kenya and South Africa. Nigeria leads the way in West Africa and Egypt in North Africa.

ECOSYSTEM MAPPING

TOP FUNDED COMPANIES ACROSS:



LOGISTICS

Solutions managing, moving and storing raw material, components, and products between the points of origin and consumption



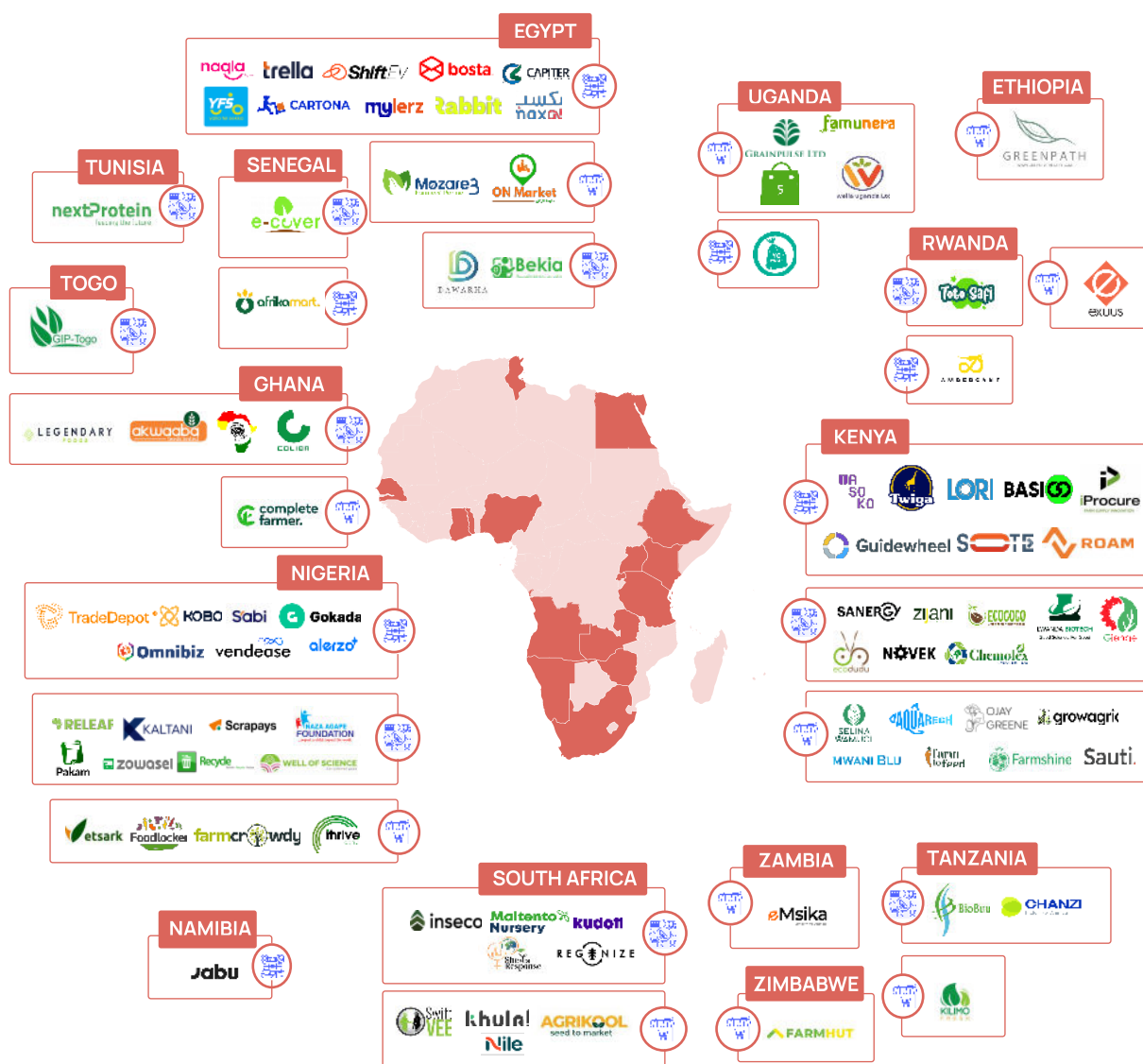
CIRCULAR ECONOMY

Solutions reusing, recycling, and regenerating materials and products to reduce the environmental impact of production cycles



MARKETPLACES

Digital platforms that bring sellers and buyers together on agricultural inputs and products as well as climate related commodities such as carbon credit.



Data source: Brttr Intelligence data of companies funded between January 2015 and June 2023 and Katapult Africa 2023 application data. Each company is assigned one vertical based on its primary product type. Companies that provide multiple products are analysed further to identify the main product or the larger product grouping of their different solutions. See the sections on verticals for the definition and the product types of each vertical.

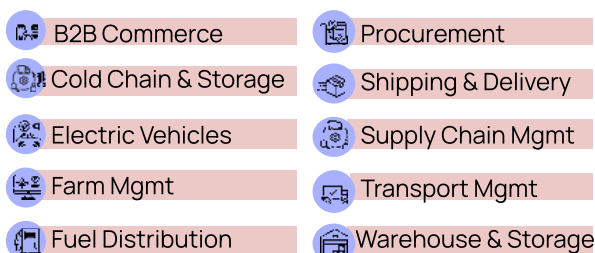
LOGISTICS

The logistics vertical is gaining traction as growth-stage logistics companies capture commercial users and expand vertically.

Logistics startups use technology to provide solutions for managing, moving and storing raw materials, components, and products between the points of origin and consumption. Logistics solutions contribute to reducing the high rate of post-harvest loss and food waste, improving traceability in the movement of goods, and solving for

infrastructural challenges to improve distribution and trade. Weak logistics infrastructure and the high cost to adopt EVs across the African continent pose difficulties for the logistics innovation industry to develop. However, recent key regulatory progress such as the introduction of AfCFTA to increase cross-border trade and the tax reduction or exemptions for EVs in Kenya, Seychelles, Mauritius, Rwanda, and Zambia signal that the logistics and supply chain innovators have a more favourable environment to test their solutions in the markets and grow.

LOGISTICS PRODUCT TYPES



FUNDING OVER THE YEARS | LOGISTICS



Source: Briter Intelligence data of funded companies between Q1 2015-Q2 2023 and Katapult Africa's 2023 application data

The funding trend over the years shows that the logistics vertical has grown consistently since 2015. Between January 2015 and June 2023, the logistical vertical saw 176 startups raise a total of \$1.2B through 328 deals. The median deal size during this period is \$825K. The logistics vertical saw a growth spurt in 2019 with 8 deals with a ticket size of over \$1M going into Kobo360, Wasoko, TradeDepot, Inspira Farms, and Twiga Farms. It seemed that the big ticket size deals in 2019 created momentum for the logistics vertical as both the number of deals and the total funding volume grew much bigger in 2021 and 2022. This growth can also be attributed to a byproduct of the growing e-commerce space during Covid-19. While early-stage deals under \$1M have been the most prevalent over the years, deals with ticket sizes between \$1M-10M surpassed the number of deals over \$1M in 2022 as companies like TradeDepot, Twiga Foods, and Trella raised their growth-stage funding.

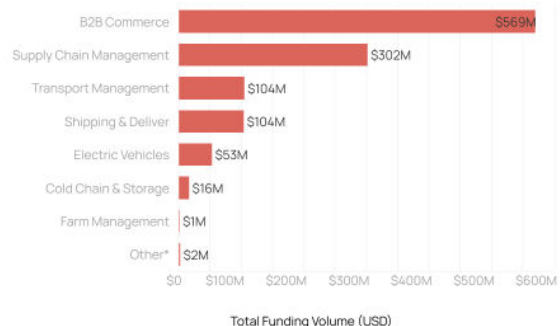
There are over 400 unique investors investing in logistics startups between 2015 and 2023. The most frequent investors in the logistics sector are Google for Startups, Y Combinator, the Baobab Network, and Novastar Ventures. 26% of inventors are repeated investors who have invested in more than one logistics startup and 62% of investors have invested as the sole investor in a round.

Scaling logistics solutions have bundled their services to become a one-stop shop providing multiple services across the value chain.

Top funded products B2B commerce and supply chain management include companies offering multiple solutions that digitise and optimise the logistics supply chain. One example is iProcure, which has grown into a full-logistics service company managing, procurement, last-mile distribution and stock management while also offering business intelligence services. Similarly, TwigaFoods began by connecting farmers to retailers but now is also engaged in food production, BNPL service, a merchant super app, and call centres. Trade Depot has scaled from providing retail distribution services to providing BNPL, B2B Marketplace (ShopTopUp), and warehousing solutions. MarketForce started off with digital inventory management and then scaled by providing BNPL, digital payment and wallet, and financial marketplace. This shows that the opportunity to scale in the logistics vertical lies in bundling the right products throughout the value chain.

FUNDING VOLUME

LOGISTICS



Source: Briter Intelligence data of funded companies between Q1 2015-Q2 2023 and Katapult Africa 2023 selection data

B2B models working with commercial partners have realised more commercial viability for the logistics vertical to date.

The above samples of scaled companies all mainly have B2B business models. Scaling B2C models is more difficult in Africa due to the high costs associated with breaking the loyalty loop, high competition with incumbents, and getting a large enough number of users to keep the business sustainable. This difficulty is magnified when working with non-commercial scale farmers (i.e., the majority of smallholder farmers) and the unit economics of creating a B2C service is too low to become commercially attractive for the VC space. Another challenge with impact-focused companies is targeting bottom-of-the-pyramid customers that have lower purchasing power. B2C-only models may as such struggle to reach commercial viability at the same pace as B2B or B2C B2B models for the VC space. For VC investors in Africa, B2B business models have generally had more attractive scaling potential, whereas B2C models have posed more challenges and present higher costs for customer acquisition and retention.

Export-facing market segments can be a scaling pathway. Most export-oriented farmers operate on a commercial scale and have to adhere to stricter safety and processing regulations of their export market. Commercial farmers, unlike smallholder farmers, have the operational need and the financial capacity to invest in logistics tech services such as logistics management and optimisation software. In addition, export-oriented farmers often have cold chain and storage requirements if exporting to markets like the EU. Scaling through targeting an export-oriented consumer base can contribute to inclusivity and climate impact by lowering transaction costs and improving access to the market. Logistics innovators that leverage export-facing customers to build business sustainability can work with smaller players in the longer run.

CIRCULAR ECONOMY

The circular economy vertical is at an early stage of development but is being activated through donors and competitions interested in circularity.

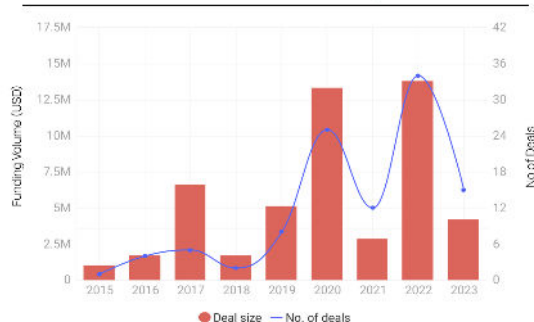
Circular economy startups use technology to provide solutions to reuse, recycle, and regenerate materials and products to reduce the environmental impact of production cycles. Circular economy solutions are particularly important in the African contexts where the recycling rates remain low, reliance on traditional waste disposal and collection practices stays high, and waste work remains largely informal. In addition, the financing gap in the circular economy hinders many African countries from prioritising and integrating circularity into broader economic policy.

CIRCULAR ECONOMY PRODUCT TYPES



FUNDING OVER THE YEARS

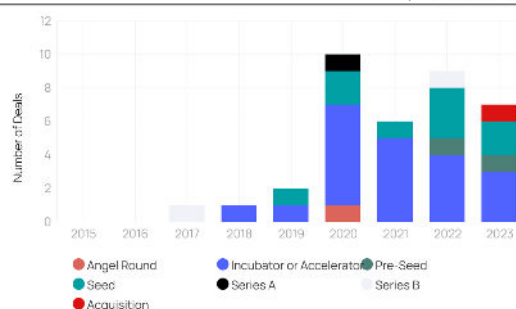
CIRCULAR ECONOMY



Source: Briter Intelligence data of funded companies between Q1 2015-Q2 2023 and Katapult Africa 2023 selection data

NUMBER OF DEALS BY DEAL STAGE

CIRCULAR ECONOMY



Source: Briter Intelligence data of funded companies between Q1 2015-Q2 2023 and Katapult Africa 2023 selection data

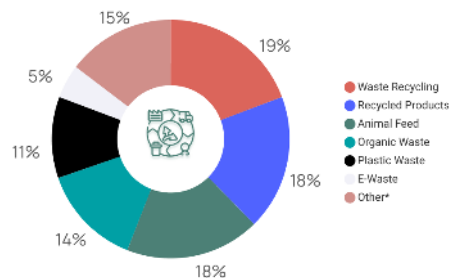
The circular economy vertical is a relatively nascent part of the climate tech ecosystem. Between January 2015 and June 2023, there are only 80 funded startups that raised 112 deals. The total volume of those deals was \$59M with the median deal size at \$100K. Deals at the incubator and accelerator stages were the most prevalent, followed by seed-stage funding. There is very little funding beyond early-stage, signalling that the circular economy vertical has yet to gain significant momentum. The circular economy vertical will need to prove that its solutions can find the right product-market fit first before scaling through VC investments.

The top funded products within the circular economy vertical are waste recycling and animal feed through insect farming solutions. Companies producing animal feed through insect farming are included in this vertical because they incorporate circularity throughout their production cycle. They collect organic and food waste to feed insects, who break it down into organic fertilisers and later become a protein source for animal feed as well as for

cosmetics and pharmaceutical products. These circular animal feed companies such as NextProtein, Inseco, and Maltento, have all raised deals over \$1M. Another growing area is waste recycling innovations, recycled plastic products (bricks, recycled plastic) from plastic waste (e.g., Kaltani, Kubik, Giprecyclage) and recycled electronic products from e-waste (e.g., QuadLoop).

NUMBER OF DEALS BY PRODUCT TYPE

CIRCULAR ECONOMY



Source: Eriq Intelligence data of funded companies between Q1 2015 - Q2 2023 and Katapult Africa 2023 selection data

As the majority of the deals are early-stage, the majority of disclosed deals come through competitions, incubators, accelerators, donors, and impact investors. There are about 100 investors that have invested in the circular economy vertical in Africa, and many of them are solo investors who have not yet participated in follow-on investments. Some of the top investors are Afri-Plastic Challenge, Unicef Startup Lab, and Greentec Capital Partners.

Fragmented infrastructure in this nascent vertical means that circular economy innovators need to address different steps along the waste management and recycled product production value chain. Innovators can develop an in-house solution or work with other companies that address a gap in the circular economy value chain (e.g., waste collection, sorting, storage, production, product distribution) in order to find the right product market fit.

Corporations play a key role in making the circular economy vertical grow as a distribution channel provider, a test-bed, and a buyer. Corporations can help startups access larger distribution channels for their products that otherwise would not be accessible for startups. For example, Inseco collects food waste from commercial entities, allowing the company to have more predictable and sustainable input. In addition, corporations can partner with a startup to solve a particular problem area. This type of partnership helps startups to test their products and to provide a runway for their operation while also addressing the corporate's pain point at a relatively low cost. Lastly, corporates acquiring scaling startups can send positive signals that the vertical has the potential for financial return. In the early stage of fintech sector development, corporate acquisition of startups such as Standard Bank's acquisition of SnapScan in South Africa signalled that there are opportunities for financial return and became a trigger for the sector to grow. The circular economy could also benefit from these synergetic dynamics with corporations.

Governments can also become valuable clients and partners for circular economy innovators. Many segments of the circular economy such as waste removal and waste management are linked with public services. Working with governments through B2G models can both fill the gaps in public service provision and also help test out products with the collaboration of public services.

MARKETPLACES

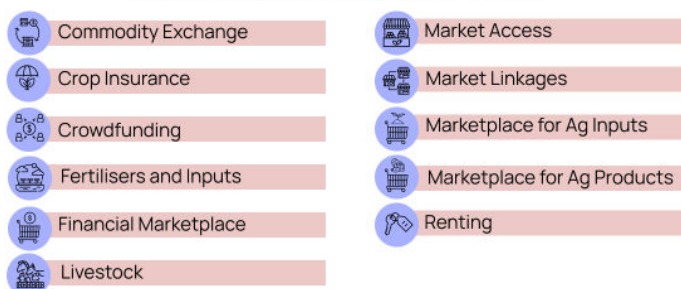
Marketplaces solutions in the agriculture sector have been growing but climate-focused marketplaces are limited.

Marketplaces startups provide digital platforms to bring sellers and buyers together to exchange agricultural inputs and products as well as climate-related commodities such as carbon credits, carbon reduction projects, and climate financing.

Marketplace solutions help buyers and sellers in the agricultural value chain to

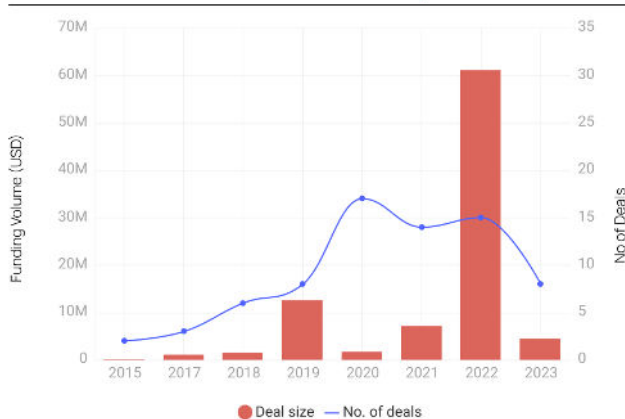
build more resilience and reduce inefficiencies by increasing the information flow, reducing transaction costs, stabilising unpredictable prices of agricultural inputs and products, and reducing reliance on intermediaries. Given that the lack of information and market access poses a great challenge to farmers from innovating, marketplaces serve an important role in improving access and reducing transaction cost. Smallholder farmers in particular have low levels of technology adoption so onboarding them to marketplaces can be an important step in reducing structural inequalities. Recently, there have been harmonisation efforts in the plurilateral regulatory landscape in ECOWAS and EACO to ensure more transparent and trustworthy e-commerce policies across African countries.

MARKETPLACES PRODUCT TYPES



The marketplaces ecosystem is the smallest of the three areas explored in this research in terms of the number of deals. Between January 2015 and June 2023, the marketplaces vertical had 50 startups raise a total of \$90M through 74 deals. The median ticket size during this period is \$123K. This is in part because marketplaces in this context are considered through the lens of agriculture and climate, whereas logistics and circular economy represent larger sectors with many underlying products and verticals.

FUNDING OVER THE YEARS | MARKETPLACES

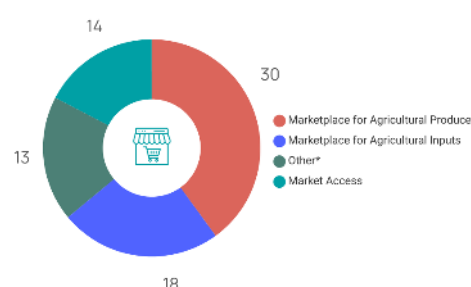


Source: Briter Intelligence data of funded companies between Q1 2015-Q2 2023 and Katapult Africa 2023 selection data

The number of investors in marketplaces is also the smallest out of three verticals. There are 74 unique investors in the space, many of whom are accelerators and incubators such as Pitch AgriHack and Y Combinator. At this stage, 80% of the deals have only one investor. Investors do not seem to be actively targeting the marketplaces vertical yet as only 19% have invested in more than one marketplaces startup deal.

The top-funded marketplaces platforms have a tendency to grow toward one-stop-shop apps. This is a similar trend seen in the logistics vertical. For example, Mozare3 connects buyers to contractual farmers through their platform but has scaled by offering additional

NUMBER OF DEALS BY PRODUCT TYPE | MARKETPLACES



Source: Iriter intelligence data of funded companies between Q1 2015-Q2 2023 and Katapult Africa 2023 selection data

services such as input financing, agronomy support, post-harvest quality control, and traceability data collection. Nile connects agricultural producers to buyers but also offers delivery and fund transfer services. Companies with the most amount of funding such as Releaf and ThriveAgric have moved away from pure marketplaces platform models and into providing much more hands-on support over the supply chain to connect farmers to their buyers. This does not mean that marketplaces

alone do not have the potential for success. Rather, the success cases are smaller in number. Khula, a South African agtech platform that connects farmers to buyers and corporates, has raised multiple rounds from Google for Startups, \$1.3M equity funding in 2021, and had a minority stake acquired by Absa in 2023. But even Khula offers an array of services where farmers can access both input marketplaces and produce trading marketplaces.

Climate-relevant marketplaces outside of the agriculture space are still very small.

Carbon credit marketplaces are just beginning to emerge but will need to increase traceability and transparency on the supply side in order to retain and attract additional users. Traceability is important to ensure the validity, quality and sustainability of carbon reduction products on which carbon credits are predicated. Marketplaces of climate projects and climate financing are beginning to emerge but take a much smaller portion of the vertical. But given that the broader e-commerce and digital marketplaces landscape is one of the largest and fastest growing areas in the technology and innovation ecosystem in Africa, the climate marketplaces space will likely grow given right incentives and funding.

The marketplaces vertical can be better understood when applied to a specific sector like e-commerce or agriculture. The main function of marketplaces solutions is to provide market linkages between stakeholders in a sector or industry. Marketplaces as SaaS products can be relatively easily replicated across different sectors. But adopting SaaS technology is a small piece of the puzzle as marketplaces innovators need to gain a deep understanding of their operational sector and customise their value-adds in connecting stakeholders of the relevant market segment. So investors interested in the climatetech marketplaces vertical should map out the value chain and the landscape of relevant sectors (e.g., e-commerce, agriculture, logistics, energytech and govtech) and assess the marketplaces players that are creating market linkages in the sector.

Marketplaces solutions also need market linkages to grow. Marketplaces companies rely on network effects and hence require a sizeable user base to scale. Burgeoning startups do not always have market access to the user bases or the distribution channels. So marketplace solutions should collaborate with other stakeholders in the value chain, such as agricultural corporates on the production side or logistics companies to build out their services.

GROWTH OPPORTUNITIES

Opportunities for VCs to create climate adaptation, resilience and mitigation impact whilst achieving commercial returns exist in the African climate tech innovation ecosystem, especially among solutions that create market linkages between businesses and producers/consumers, and can add value in multiple stages across the value chain.

This research shows that there are different pockets of opportunities within the growing climatetech landscape in Africa. In particular, B2B businesses and the logistics vertical are building momentum while the circular economy vertical is burgeoning to prove its commercial viability. The marketplace vertical needs to be disaggregated and assessed by its application in a specific sector.

A deep-dive research into the three verticals reveals that successful companies are scaling by bundling their services across the value chain. This “bundling” growth strategy also signifies the importance of understanding the interactions among these three verticals and how different products can be brought into the climate lens to activate the climate space. Creating and promoting strategic linkages among products will be an important building block to creating traction and demonstrating impact and profitability in the African climate tech space.

Scaling can come through expanding to different parts of the value chain rather than simply taking a successful business model and applying it to a different sector. Therefore, investors activating the African climate tech space need to understand the unique gaps and opportunities that exist in a value chain of a particular sector rather than spreading too thin across the broad climate tech space. One method to do this is to develop a pipeline within a particular sector and to provide more specialised support. In addition, VCs should work with hubs and sectoral experts that can provide more specialised technical support for their pipeline sourcing and due diligence process.

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