
THE AGRICULTURAL
MARKETING ECOSYSTEM

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A peer-to-peer agricultural marketing system that enables anyone to participate in the producing, buying and selling of African agricultural products.

A B S T R A C T

InventoryClub is developing an agricultural marketing ecosystem that leverages blockchain technology to make it easier for anyone to participate in the producing, buying and selling of African agriculture. Utilising a public blockchain for financial transactions and a permissioned blockchain for data transactions increases trust, security, transparency and traceability in the agricultural value chain. It also increases stakeholders access to verified data.

InventoryClub's digital token VNT is a medium of exchange within the ecosystem enabling token holders to participate in DACs to vote on profit shares and community decisions. VNT holders can participate in peer-to-peer (P2P) business agreements to finance traders to drop ship agricultural products. Smart contracts govern the DACs and P2P business agreements; executing when specific criteria are met. This whitepaper explores the African agricultural value chain, the opportunities, challenges faced and how InventoryClub plans to use blockchain to interconnect the value chain to tackle the challenges and maximise the opportunities.



INTRODUCTION

With 54 countries, a combined population of 1.2 billion people, approx. 60% of the world's arable land and over 100 million small holder farmers employing 60-70% of the population; Africa should be a self-sustaining continent, at least agriculturally but instead Africa experiences lower than average yields per hectare, approx. 30% post-harvest losses and is a net importer of food with an estimated annual bill of USD 64.5 billion.

Africa is an agricultural sleeping giant still operating using first stage farming technologies, an era dubbed the green revolution, which was characterised by the use of fertilisers and pesticides. Whilst countries such as China, Brazil and Argentina are in the modern-agriculture phase, which involves new generations of crop-protection products and new methods of cultivation, for example, mechanization. The 21st century agriculture phase, characterised by precision agriculture is practiced by the European Union and the United States, and involves using advanced analytics to apply nutrients and crop-protection products at variable rates. As we move to the next generation agriculture technologies, African producers must apply a blended approach to mastering modern-agriculture and precision agriculture in order to increase yields, reduce post-harvest losses and the food import bill.

Global food security is tightly coupled with African agriculture, as the growing African and Asian populations and economic growth generate more need for increased levels of crop and food production. The global increase in food demand, population growth, food waste and food losses will create food insecurity causing many middle-class families to experience food poverty.

For Africa to become self-sufficient with agriculture, the continents agricultural value chains need more inclusivity for disadvantaged market players, in order to boost their economic development and contribute to the demand for greater food supplies by a growing global population. Many small-scale operators struggle to participate in integrated value chains, due to the lack of access to financing, issues of market accessibility and transport, and of complying with the range of standards on quality, traceability and certification (FAO 2017).

Internet technologies present Africa with a huge opportunity to achieve its sustainable development goals (SDG) using e-commerce, which has been an enabler for many small and medium enterprises (SMEs) to access worldwide business resources and reach new markets without the need to physically leave their countries borders. E-commerce can enable developing economies to bypass certain technological barriers and engage with innovative supply chain models that create value for stakeholders.

The African Continental Free Trade Area (AfCFTA) started trading in January 2021. It is largest free trade area since the formation of the World Trade Organization and estimates from the Economic Commission for Africa (UNECA) suggest that the AfCFTA has the potential to boost intra- African trade by 52.3%. In 2013 The World Bank estimated that the value of Africa's agriculture and agribusiness market could expand to USD 1 trillion by 2030. The potential is huge, but the continent faces significant challenges – including access to energy and irrigation, as well as the need for basic infrastructure, which raises the question- will the sleeping giant ever arise?



AFRICAN CONTINENTAL FREE TRADE AGREEMENT AT A GLANCE

The AfCFTA establishes a single market for made in Africa goods and services, eliminates tariffs by 90% and tackles non-tariff barriers such as customs delays. With a combined GDP of USD 3 trillion and a unified market of 1.2 billion people; AfCFTA presents a strong foundation for industrialization, sustainable growth and increased economic development.

AfCFTA Benefits:

Creates a Single Market.

- The main objective is to create a single market for goods and services to increase trading among African nations.

Expected Economic Boost and Trade Diversity.

- UNECA estimates that AfCFTA will boost intra- African trade by 52.3% once import duties and non-tariff barriers are eliminated.

Collaborative Structure and Enforcement.

- All decisions of the AfCFTA institutions are reached by a simple majority vote.

Eliminating Tariffs.

- State parties will progressively eliminate import duties and apply preferential tariffs to imports from other state parties.

Settling Trade Disputes.

- The AfCFTA has a Dispute Settlement Mechanism in place offering mediated consultations between disputing state parties.

Protecting Women Traders.

- Women are estimated to account for around 70% of informal cross- border traders. With the reduced tariffs, it will be more affordable for women to trade through formal channels where women traders will not have to put themselves in dangerous situations.

Growing Small and Medium-Sized Businesses.

- The elimination of import duties also opens trading activities to small businesses in the regional markets.

Encouraging Industrialization.

- There is potential for Africa's manufacturing sector to double in size from \$500 billion in 2015 to \$1 trillion in 2025, creating 14 million stable jobs.



THE AFRICAN AGRICULTURE OPPORTUNITY

Agriculture is the single most important economic activity in Africa. It provides employment for about two-thirds of the continent's working population and for each country contributes an average of 30-60% of gross domestic product and about 30% of the value of exports. Africa is home to approximately 100 million small holder farmers and holds 60% of the world's uncultivated arable land, yet Africa is still a net importer of agricultural products with a food import bill of about USD 64.5 billion according to estimates by African Development Bank (AfDB) in 2017 compared with exports of USD 35-40 billion according to McKinsey & Company. Africa's yield levels are one of the lowest in the world, coupled with 30-50% of production being lost at various points of the value chain makes it harder to meet the growing domestic demand. The Food and Agriculture Organisation (FAO) predict that food demand will increase by 1.1% a year between 2006 and 2050, or by 70% of the whole period. The primary drivers for this demand stems from Africa and Asia, mainly due to population and GDP growth.

The potential for Africa's agriculture is huge but the continent faces significant challenges such as access to energy and irrigation as well as basic infrastructure. Taking a holistic approach to develop the agricultural value chain will enable the continent to unlock its potential in feeding herself and the rest of the world. The COVID-19 pandemic has given us a glimpse of what global food insecurity could look like if nothing is done to secure future food supplies. It has also highlighted the critical role digitization of the agricultural value chain will play in meeting increased demand. The agribusiness value chain is a complex one spanning input companies, farmers, traders, food companies and retailers, all working to meet the demands of end consumers in a sustainable way. Digitization not only impacts individual stages in the value chain but also helps integrate them by tracking the progress of crops and foodstuffs from production to consumption, providing the information needed for traceability.

In January 2021, the African Continental Free Trade Area (AfCFTA) started trading. The AfCFTA is a single continent-wide market for goods and services and to promote the movement of capital and natural persons. It is expected to accelerate economic integration and expand trade in Africa's first single market of 1.2 billion people, valued at USD 3 trillion. The World Bank (2013) estimates that the value of Africa's agriculture and agribusiness market could expand to USD 1 trillion by 2030. AfCFTA creates the environment and supporting policies for Africa to realize its agricultural and economic potential and promote inclusive growth and sustainable development by enhancing trade in agricultural produce and foodstuffs. Strengthening the national capacity for food and commodity production for regional markets will provide a solid foundation for nations to boost regional trade. Digital platforms with real-time data on food demand and supply play an important role in facilitating continental trade; and will prove useful given the different weather and climatic conditions across the continent as well as seasonality of food products.

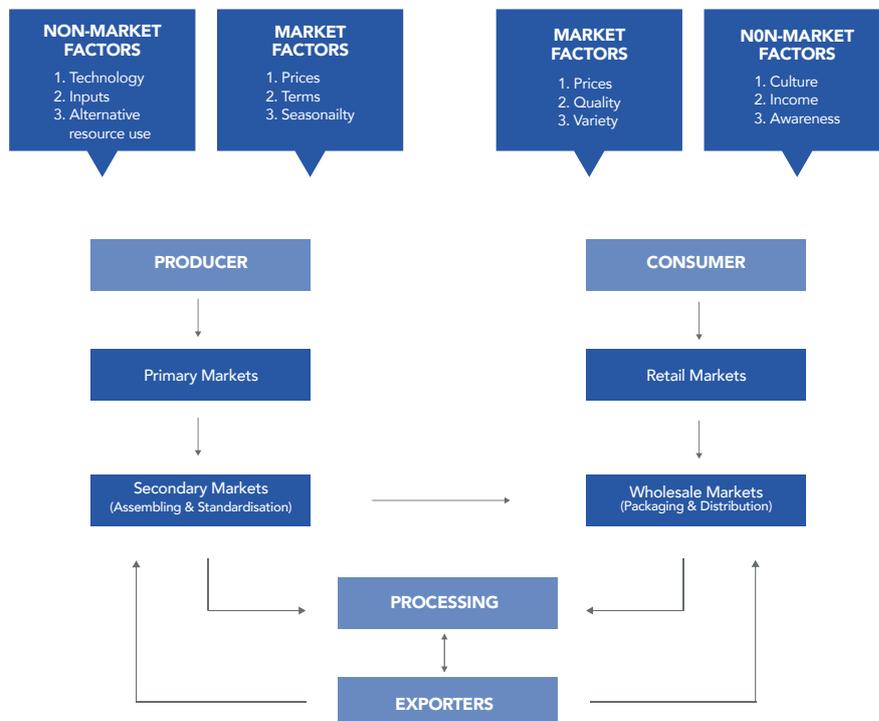
Africa's legalised cannabis market is set to reach USD 7.1 billion by 2023 according to Prohibition Partners, a research and consulting firm in the legal cannabis industry. African countries are putting in place the regulatory and legal environments to attract investment and technology to put their arable lands and huge labour force to work. There are opportunities to create industries for processing and exporting cannabis products as well as exporting raw products. Africa has a huge opportunity to contribute to cannabis innovations, not only in medicine, but through other sectors such as paper production, eco bricks and plastics. Cannabis is one of Africa's fastest-growing sectors, and as more countries make cannabis legal it could become one of the continent's most lucrative industries with the demand for medical cannabis surging worldwide.



AGRICULTURAL MARKETING SYSTEM

Agricultural marketing comprises all the operations involved in the movement of agricultural products from the farm to the consumer. It involves the sale and transfer of agricultural inputs to the farmers and purchase of farm harvest by consumers. It includes handling of product at the farm, initial processing, grading and packing in order to maintain and enhance quality and avoid wastage. Generally, the farmers sell their agricultural produce immediately after harvest in raw form without any processing, which creates a need for intermediaries to operate between the producer and consumer, this is called the marketing channel. The type and complexity of the marketing channel varies with different commodities. The other side of agricultural marketing works to promote agricultural products and services to farmers and agribusiness.

Agricultural marketing plays an important role in providing raw materials for industries, providing food grains for the population and fodder for cattle as well as providing a base for the expansion of a country's internal market. For agricultural marketing to lay a strong foundation for the African agricultural value chain there needs to be a good market infrastructure, access to market information, access to processing facilities, storage facilities, cost-effective transport and stable prices.



SUSTAINABLE DEVELOPMENT GOALS

The 17 Sustainable Development Goals (SDG) are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. Achieving the SDGS in food and agriculture could generate USD 2.3 trillion in global revenue and savings as well as create 21 million jobs in new food markets across Africa. Our project will address 6 of the 17 SDGs.



SDG No. 2 – Zero Hunger

Goal: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

InventoryClub is working towards Zero Hunger through increased productivity at farms, improved post-harvest practices and reduced post-harvest losses.



SDG No. 5 – Gender Equality

Goal: Achieve gender equality and empower all women and girls.

InventoryClub is working to make it easier for women to enter and grow in Africa's agricultural market.



SDG No. 7 – Affordable and Clean Energy

Ensure access to affordable, reliable, sustainable and modern energy for all.

InventoryClub is working to provide affordable renewable energy to rural farming communities.



SDG No. 8 – Decent Work and Economic Growth

Goal: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

InventoryClub is focused on building and strengthening the African agricultural value chain, which requires a skilled labour force to operate efficiently.



SDG No. 9 – Industry, Infrastructure and Innovation

Goal: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

InventoryClub is committed to enabling innovative solutions and developing physical infrastructure to support the African agricultural value chain.



SDG No. 17 – Partnership for The Goals

Goal: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

InventoryClub is committed to working with any person or organisation to grow the agricultural value chain and achieve the goals.



THE CHALLENGE

Extensive research has been conducted from organisations such as the Food and Agriculture Organisation (FAO) and consulting firms such as McKinsey & Company have identified several challenges that inhibit the African agricultural value chain's ability to strengthen its food and commodity production.

Key Challenges:

- Inadequate storage or cold chain infrastructure
- Inadequate farming inputs such as quality seeds and fertilisers
- Inadequate access to machines and modern farming practices
- Inadequate access to markets
- Inadequate finance or credit facilities
- Inadequate access to energy
- Inadequate access to affordable crop insurance
- Inadequate irrigation systems
- Inadequate processing facilities
- Undercapitalisation and underinvestment in processing and mechanisation



Inadequate storage facilities coupled with post-harvest practices results in farmers losing approximately 30% of what they grow.



Inadequate farming inputs such as seeds and fertilisers means that farmers are unable to maximise their yield per acre.



Inadequate access to machines and modern farming practices affect land cultivation, yields and productivity.



Inadequate access to markets drives prices down, contributes to food wastage and demotivates farmers.



**Interconnecting the
African agricultural
value chain to improve
food security, boost
productivity, increase
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reduce post-harvest
loses.**

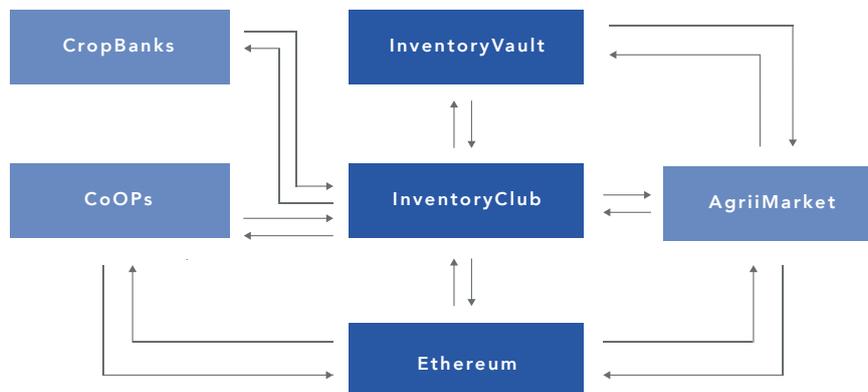
OUR SOLUTION

African agriculture is currently underserved and underdeveloped. With the launch of AfCTFA, agriculture presents a great opportunity for economic and social impact through continental trade. InventoryClub interconnects the African agricultural value chain to improve food security, boost productivity, increase stakeholder value and reduce post-harvest losses. We provide pre- and post- harvest services across the value chain to enable the movement of farm commodities to end consumers. Our agricultural marketing ecosystem makes it easier for anyone to participate in the producing, buying and selling of African agriculture through co-operatives and drop shipping services.



THE INVENTORYCLUB ECOSYSTEM

The InventoryClub ecosystem is made up of the InventoryClub marketplace, the AgriiMarket marketplace, Decentralised Agricultural Co-operatives (DAC) and CropBanks. The ecosystem interacts with the InventoryVault blockchain and Ethereum blockchain to deliver a transparent, secure and a trustless user experience.



InventoryClub Marketplace

The InventoryClub marketplace enables members, farmers, agribusinesses and traders to manage their interactions with DACs and the AgriiMarket. Members can join and manage their positions in DACs, farmers and agribusinesses can manage agricultural projects and, traders and members are able to engage in P2P business agreements for agricultural dropshipping.

AgriiMarket

AgriiMarket is a secondary marketplace where traders that have been financed via InventoryClub's P2P business agreements are able to sell their products locally, regionally and internationally. Each trader has their own dropshipping store front showcasing the products that have been financed and ready for sale.



Decentralized Agricultural Co-operatives (DAC)

Decentralized Agricultural Co-operatives (DAC) are member-owned agricultural co-operatives (CoOPs) enabling members to work as a collective to pull resources together to conduct a variety of activities within the agricultural value chain. CoOP ownership is based on the number of units held by any one member and each member gets one vote in any poll. The CoOP units are non-fungible and non-transferable. At the end of each year members can vote how they would like the returns to be split. Each member gets one vote, and our smart contracts execute when specific criteria are met.

CropBanks

InventoryClub's warehouse facilities are called CropBanks, this is where all crop under management are stored. CropBanks are integrated with InventoryClub's warehouse receipt and inventory management systems. Any crop purchases are deposited at a CropBank and all purchases on AgriiMarket are dispatched from a CropBank.

InventoryVault

InventoryVault is a permissioned blockchain providing access to VNT token holders. InventoryVault serves as a single source of truth for the African agricultural value chain recording all data transactions from InventoryClub and AgriiMarket. Smart contracts execute according to the business rules governing the ecosystem and provide token holders with real-time, transparent and immutable data such as crop prices and provenance, project monitoring and evaluation, and crop supply and demand. The integrity of InventoryVault is maintained by external node validators that have completed KYC checks.



CO-OPERATIVES (CoOPs)

InventoryClub will be opening 6 CoOPs for its members, these are Farming Input, Off Taker, Women Agribusiness, Energy & Infrastructure, AgTech and Hemp & Cannabis. Members can join any number of these co-operatives using their VNT tokens, funds and resources are deployed through our partners to the benefactors to carry out their agribusiness activities. Agribusinesses across the African continent can join the CoOPs and submit project proposals to be financed. Projects that meet the vetting criteria are financed by the CoOP and members can track the projects progress. CoOP members that shop on AgriiMarket receive rewards based on the amount they spend and the amount of CoOP units held.



Farming Input CoOP provides access to quality inputs such as seeds and fertiliser as well as machinery and extension services.



Energy & Infrastructure CoOP provides rural farming communities with access to micro processing hubs powered renewable energy



Off Taker CoOP aggregates crop from small holder farmers, cleans, grades and sometimes processes the crop then resells to the market



AgTech CoOP provides access to patient capital for innovative agricultural technology companies to start and grow their businesses

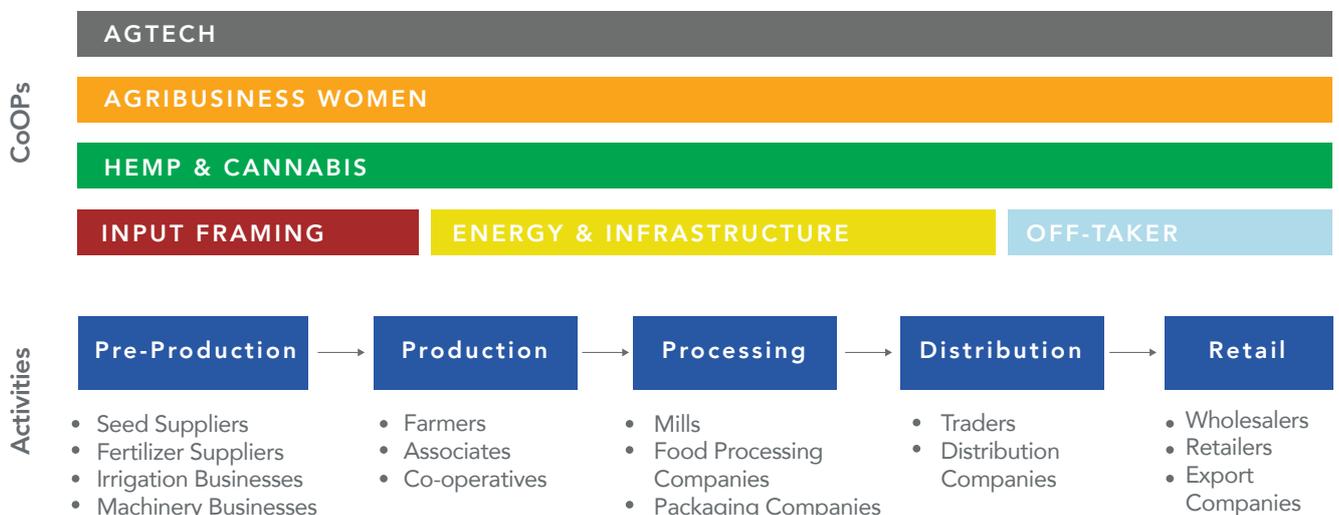


Women Agribusiness CoOP provides access to patient capital to enable women working across agricultural value chain to start and grow their businesses



Hemp & Cannabis CoOP provides access to patient capital for agribusinesses engaging in hemp & cannabis value chain.

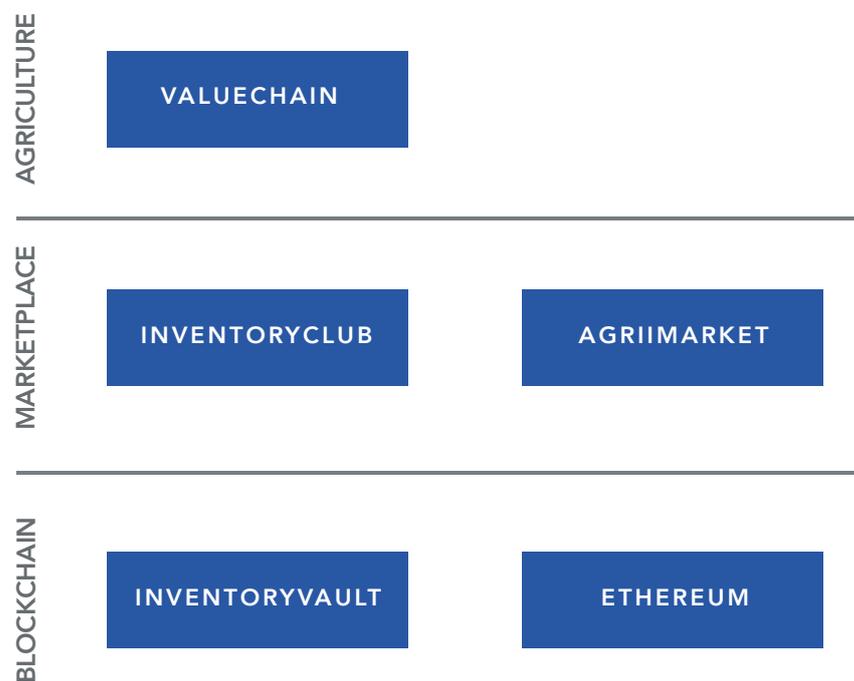
CoOPs in the Value Chain



BLOCKCHAIN TECHNOLOGY IN INVENTORYCLUB

The InventoryClub ecosystem uses blockchain to provide a secure and transparent digital agricultural value chain for Africa. Blockchain is a distributed ledger that is synchronized and accessible across different locations and people. Within InventoryClub it increases trust, security, transparency and traceability. This makes the value chain more secure as the origin and authenticity of products is known, proven and shared. Business rules are enforced and automated with smart contracts; removing the need for a central authority to keep a check against manipulation.

Blockchain enables InventoryClub to achieve decentralisation with financial transactions and the smart contracts to govern them recorded on Ethereum and data transactions along with their governing smart contracts are recorded on InventoryVault.



BLOCKCHAIN TECHNOLOGY IN AGRICULTURE

Agricultural blockchain solutions can address many important industry challenges such as food tracking, food quality and safety, monitoring and weather forecasting. Blockchain helps improve the efficiency, transparency and accountability of the agricultural value chain and enhance trust between network participants. Underlying the agricultural marketing systems is the essential data and information on the natural resources that support all forms of farming. Blockchain makes it possible to store data and information that various actors and stakeholders generate throughout the entire process of producing an agricultural product from seed to sale. It ensures that the data and information are transparent to the involved actors and stakeholders and all recorded data are immutable.

The transparency of blockchain evokes stakeholder contribution to developing the African agricultural value chain. Over time, the database created using blockchain can be used to inform decision-making on where to best apply resources across the value chain. Data captured during of the farming process allows for data-driven facilities and insurance solutions to be developed to make farming smarter and less vulnerable. Blockchain helps producers establish a trust relationship with consumers and build up the reputation of their products by transparently providing individual product information. This encourages healthy competition amongst producers and improves the quality of products in the agricultural and food sectors. For consumers' blockchain enables access to true and reliable information about how food is produced and transacted. It helps address consumers' concern about the safety, quality and environmental friendliness of food.

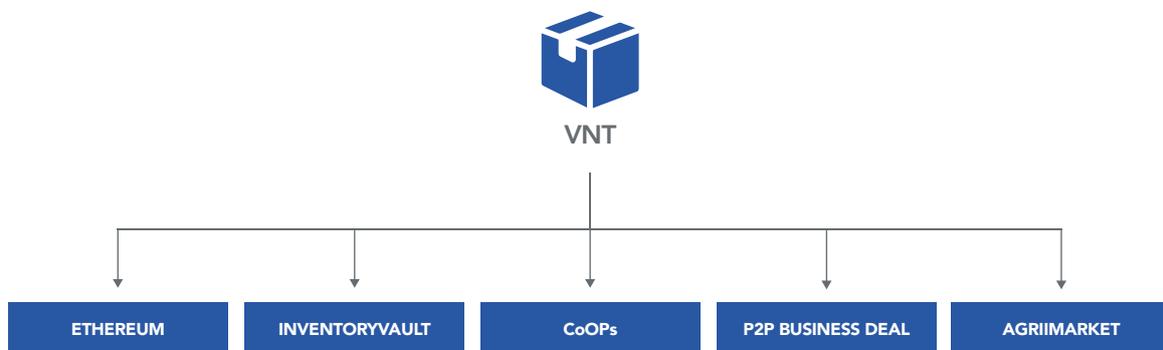
Blockchain reduces the need for farmers to break their contractual agreements by side-selling to another buyer often at a lower price to meet current liquidity needs. This practice is caused by long delays in payments due to logistical challenges, liquidity constraints and heavy friction in transactions. Smart contracts enable payment process automation, which will allow for the disbursement of payment upon the receipt of goods. This provides real-time payment and increases the working capital of farmers and all value chain actors.



INVENTORYCLUB TOKEN (VNT)

The InventoryClub Token (VNT) is a platform token serving several functions for the InventoryClub ecosystem including a medium of exchange. VNT is an ERC20 cryptocurrency on the Ethereum blockchain. Ethereum is the second largest cryptocurrency by trading volume.

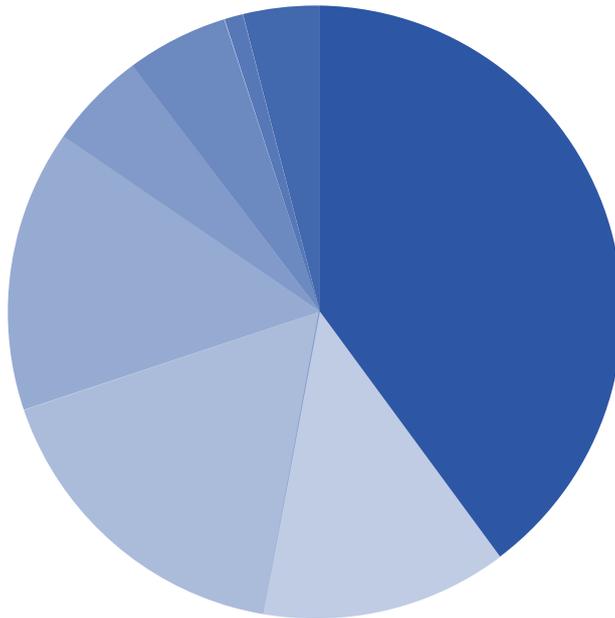
VNT provides an audit trail on the Ethereum blockchain, which serves as the financial infrastructure for InventoryClub and enables token holders to interact with our CoOPs and participate in P2P business agreements. VNT grants holders' access to the InventoryVault blockchain to view historic transactions and basic analytics. It can also be used for product purchases on AgriiMarket as well as other agribusiness products and services. Buyers making purchases with VNT receive a discount on their purchase.



TOKENOMICS

Token Name: InventoryClub
Token Ticker: VNT
Token Type: ERC20
Network: Ethereum
Total Supply: 250,000,000 VNT

TOKEN ALLOCATION



- 40% Public Sale
- 13% Treasury
- 17% Incentives & Rewards
- 15% Team
- 5% Research
- 5% Advisors
- 1% Bounties
- 4% Reserves



SUMMARY

InventoryClub presents an opportunity for an interconnected African agricultural value chain to ensure a good market infrastructure, access to market information, access to processing facilities, storage facilities, cost-effective transport and stable prices. Using blockchain helps improve the efficiency, transparency and accountability of the agricultural value chain and enhance trust between stakeholders. Decentralised Agricultural Co-operatives make it possible for anyone across the globe to work with African producers and agribusinesses to meet the growing global demand for food and agricultural commodities. InventoryClub can improve annual yields, reduce post-harvest losses and reduce Africa's food import bill. In doing so, DAC members reap the social and economic benefits through improved intra-trade as well as increased access to global export markets. Our solution promotes trade and investment, creates jobs in the agricultural sector along with its supporting industries to contribute towards achieving the Sustainable Development Goals.



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